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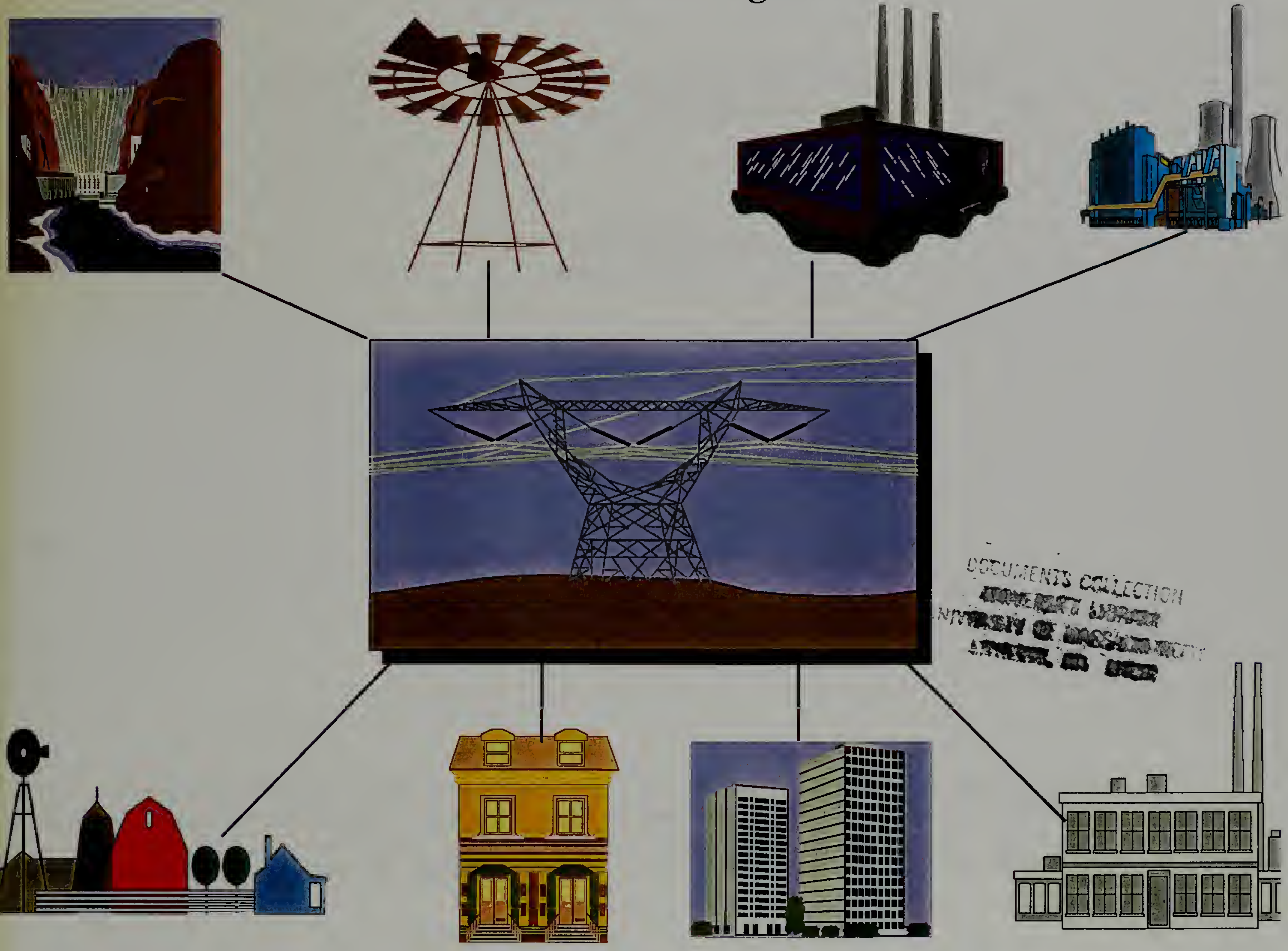
The Joint Committee on Electric Utility Restructuring

# of the

Massachusetts Legislature



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Report and Legislation

March 20, 1997

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The Joint Commmittee on Electric Utility Restructuring of the Massachusetts Legislature

Report and Legislation

March 20, 1997

Report prepared with the assistance of Carrie Cullen Hitt, Assistant Director, Harvard Electricity Policy Group (the views presented in the Report are not attributable to the Harvard Electricity Policy Group or any of its members). Jennifer Amigone, Legislative Assistant, Office of Representative Peter Larkin, provided special assistance. Legislation drafted by Jack Habib, General Counsel, Office of Senator John O'Brien.

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March 20, 1997

To the Honorable Senate and House of Representatives:

The Joint Committee on Electric Utility Restructuring (as established by Section 570 of Chapter 151 of the Acts of 1996), hereby files this final report.

MEMBERS

Senator John D. O'Brien, Senate Chairman	Representative Peter Larkin, House Chairman
Senator Edward Clancy, Jr., Vice-Chairman	Representative Daniel Bosley, Vice Chairman
Senator Michael Morrissey	Representative Paul Casey
Senator Robert Durand	Representative Timothy Toomey
Senator Therese Murray	Representative Maryanne Lewis
Senator Henri Rauschenbach	Representative Ronald Gauch
Senator Matthew Amorello	

BACKGROUND

As part of Chapter 151 of the Acts of 1996 (the Fiscal Year 1997 State Budget), the legislature adopted Section 570, originally proposed by Senator John D. O'Brien, establishing the joint committee on electric utility restructuring.

In summary, the committee was charged with investigating the issues surrounding electric utility restructuring including but not limited to stranded cost recovery, environmental impact, reform of the Energy Facilities Siting Board, the impact on municipal light departments and municipal aggregation. The above senators and representatives were named to the committee during the months of September and October of 1996. With this charge in mind the committee met publicly with the following individuals and groups to discuss the topics outlined:

NOVEMBER

November 7-	**Elizabeth Moler, Chair, Federal Energy Regulatory Commission** Federal Legislative/Regulatory Action and Jurisdiction Issues
November 18-	**Rob Shapiro, Competitive Power Coalition** **Rob Sargent, MassPIRG** **Alan Nogee, Union of Concerned Scientists** **Michael Ernst, Acting General Counsel, DPU** **Dierdre Matthews, Energy Facilities Siting Board** Reform of the Energy Facilities Siting Board
November 25-	**Len Rucker, Reading Municipal Light Department** **Tom Josie, Shrewsbury Municipal Light Department** **John Boudreau, Massachusetts Municipal Wholesale Electric Company** **Wayne Marquis, Massachusetts Municipal Association** **Neil Harrington, Mayor, City of Salem, MA** **Ed Collins, Chief Financial Officer, City of Boston** **Dennis Rindone, Selectman, Town of Erving** **Michael Daley, Finance Director, Town of Plymouth** **Walter McLaughlin, Attorney, Gilman, McLaughlin & Hanrahan** **Penny Geis, County Administrator, Hampshire County**

Matt Patrick, Selectman, Town of Falmouth
Impact of Utility Restructuring on Cities and Towns Including Property Tax Impact, Development of Municipal Aggregation, Impact on Municipal Light Departments

DECEMBER

December 3,4,5- **Rick Sergel, Senior Vice President, New England Electric Systems**
Michael Jesanus, Treasurer, New England Electric Systems
John Howe, Chairman, Department of Public Utilities
George Dean, Assistant Attorney General
Doug Egan, U.S. Generating Company
Douglas Horan, Boston Edison Company
John Roman, Northeast Utilities
Russell Wright, Commonwealth Electric
Robert Powderly, Eastern Utilties
Robert Ruddock, Associated Industries of Massachusetts
John O'Connor, Citizens Action
Ken Roberts, Chief Operating Officer, Power Development Company
Stranded Costs

December 10 **Alan Bedwell, Deputy Commissioner, Department of Environmental Protection**
Lewis Milford, Conservation Law Foundation
Stephen Cowell, New England Energy Efficiency Council
Environmental Protection

December 12 **Joseph Faherty, Utility Workers Union of America, AFL-CIO**
Ed Collins, Massachusetts Alliance of Utility Unions, AFL-CIO
Frank Toland, Utility Workers Union of America, AFL-CIO
George Fogerty, Brotherhood of Utility Workers of New England
Utility Employee Issues

December 17 **Rob Sargent, MassPIRG**
Curt Collier, IRATE
Andrew Ferguson, Cooperative Development Institute
Consumer Protection

JANUARY, 1997

January 6 **John Howe, Chairman, Department of Public Utilities**
Janet Gail Besser, Commissioner, Department of Public Utilities
DPU Proposed Rules/Regulations

January 7 **David O'Connor, Commissioner, Division of Energy Resources**
Robert Ruddock, Associated Industries of Massachusetts
Rick Bowen, Pixley-Richards Corporation
Andy Newman, Western Massachusetts Industrial Customers Group
Greg Brown, Builders Owners and Managers Association
Jim Clocke, Greater Boston Chamber of Commerce
Clare Cotton, Association of Independent Colleges and Universities in MA
Jon Hurst, MA Retailers Association
Ruth Ianazzo, Energy Consortium

Chris Anderson, MA Hi-Tech Council
Chris Flynn, MA Food Association
Commercial/Industrial Impacts

January 9 **John Quain, Chairman, Pennsylvania Public Utility Commission**
Barbara Kates-Garnick, President, New Energy Ventures-New England
Nancy Day, Vice President-Customer Services, New Energy Ventures, NE
Malcolm McCay, Regulatory and Legislative Affairs, Enova Energy, California
Actions in Other States

January 15 **John Howe, Chairman, Department of Public Utilties**
David O'Connor, Commissioner, Division of Energy Resources
Nancy Brockway, National Consumer Law Center
Curt Collyer, IRATE
Changes to State Regulatory Bodies

January 16 **Howard Hiller, Saloman Brothers**
Curtis Probst, Saloman Brothers
Securitization of Stranded Costs

In addition the committee held three public hearings across the Commonwealth:

January 22- Plymouth, Plymouth Memorial Hall
January 29- Andover, Andover Memorial Hall
January 30- Pittsfield, Pittsfield City Hall

The breadth and scope of the committee's inquiry is indicative of the complexity of this issue and its importance for the legislature. We hope the following report and recommendations, including proposed legislation, prove helpful.

For the committee:

John D. O'Brien
John D. O'Brien
Senate Chair

Peter J. Larkin
Peter J. Larkin
House Chair

Sen. Edward M. Clancy, Jr.
Vice-Chair

Daniel E. Bosley
Rep. Daniel Bosley
Vice-Chair

Michael W. Morrissey
Sen. Michael W. Morrissey

Paul Casey
Rep. Paul Casey

Robert A. Durand
Sen. Robert A. Durand

Timothy J. Toomey Jr.
Rep. Timothy Toomey

Therese Murray
Sen. Therese Murray

Maryanne Lewis
Rep. Maryanne Lewis

Sen. Henri Rauschenbach

Rep. Ronald Gauch

Matt Amorello

Sen. Matthew Amorello

EXECUTIVE SUMMARY

INTRODUCTION

The Joint Committee on Electric Utility Restructuring was formed pursuant to Section 570 of Chapter 151 of the Acts of 1996. The Committee of was charged with investigating the issues related to electric utility restructuring and report back to the legislature with an initial report by December 1, 1996 and with a final report upon completion of its investigation.

After fourteen public meetings and three public hearings from November 1996 through January 1997, the Committee is issuing a comprehensive policy report on electric utility restructuring which outlines options for the legislature's consideration as debate on this issue continues. In addition to the report, the Committee has formulated its own recommendations and corresponding legislative package designed to address each of the major areas of the law which must develop if electric utility restructuring is to be successfully implemented in the Commonwealth.

COMMITTEE REPORT

.In compiling this report, the Committee's goal was to provide the legislature with a document which can be used as a reference guide. The report is a summary of the many issues which need to be considered if a transition to a new industry structure is to occur. The report also presents a number of the proposals heard throughout the Committee's investigation. These proposals, listed as *options for the legislature,* are meant to provide a "menu of choices" for legislators in Massachusetts to consider as they contemplate electric utility restructuring.

The report is divided into twelve sections. The first five sections describes the electric utility industry. Section I lays out the purpose and objectives of the Committee. Section II reviews the history of electric utility regulation and the federal/state jurisdictional issues regulators face today. A discussion of what is driving the restructuring debate in Massachusetts as well as the rest of the country is provided in Section III. A number of countries and other states have already passed restructuring proposals. Their implementation efforts are described in Section IV. Section V is a profile of the electricity industry in Massachusetts.

The second half of the report reviews restructuring issues and related proposals. Section VI describes proposals for competitive wholesale and retail electricity markets. Particular attention is paid to the unbundling of distribution services in this section. Stranded costs, the costs associated with depreciated asset value caused by the introduction of a competitive retail market, are of major interest to many market

participants. The definition, calculation, and recovery of stranded costs associated with industry restructuring are the focus of Section VII. The Committee believes that all consumers should experience the benefits of competition. With this in mind, the Committee contemplated a number of consumer issues and proposals to help consumers in a competitive market. Among the options listed are standard offer and default service, aggregation, access to education and assistance, and licensing of vendors. These and other proposals are described in Section VIII. Similarly, Section IX describes matters related to electric utility restructuring and the environment. A number of options from renewable portfolio requirements to reforming the Energy Facilities Siting Board are considered.

A number of companies have expressed an interest in creating municipal electric companies or municipal aggregators. The potential for these entities, along with the issues related to existing electric utilities are discussed in Section XI. Existing tax codes reflect the regulated monopoly structure which exists in the industry today. Changing this framework is likely to challenge the relevance of existing tax codes. In addition, a few communities ,which are home to electric generating plants, may experience a fall in revenue if the value of those facilities decline. Tax concerns and potential remedies are discussed in Section XI. Finally, Section XII looks at the implications restructuring will have on utility regulation and the Department of Public Utilities.

LEGISLATIVE RECOMMENDATIONS

Appendix A

The Committee has concluded that the time is appropriate to introduce retail competition into the Commonwealth's electricity market. Electricity rates for both residential and business customers are among the highest in the nation, which serves only to burden homeowners and businesses alike with what is basically a fixed cost service with few choices, save conservation, should they desire to reduce their electric bills.

Technological advances in the generation sector of the market have resulted in more efficient, cleaner burning generation facilities which both lessen dirty emissions and produce relatively cheap electricity at the same time. The federal government recognized this development and have passed laws during the past twenty years encouraging the development of a wholesale power market consisting of independent power producers which sell their power wholesale to utilities. Unfortunately, the combination of cost-based rate regulation and a federal provision requiring the purchase of power from these independent facilities resulted in long term purchase power contracts which, when compared to the actual cost of energy today, are particularly expensive. The Committee believes that allowing all consumers to access power directly from a generation sector independent of the customer's electric utility will both

produce rate savings and encourage job growth across the Commonwealth. As a corollary, the Committee is recommending a mandatory ten percent rate reduction for those customers who "choose not to choose" on the market during the next several years. In either case, customers across the Commonwealth will be empowered through these recommendations to realize savings from the electricity market which would not have been present under a regulated generation sector.

The Committee recognizes that the following legislative package must be implemented with the cooperation of the department of public utilities and the executive office generally, in order to encourage the smoothest transition to a deregulated power market over the coming years. Therefore, the legislation provides a comprehensive and thorough public policy framework within which the department can promulgate rules and regulations to accomplish the objectives of the legislature.

The legislative package is divided into two appendices, with the first appendix consisting of twelve sections addressing the main topics which the Committee believes legislative input is required. The are as follows:

I) **Legislative Findings**

The Committee's rationale is briefly outlined in this section.

II) **Structure of the Department of Public Utilities**

The Committee believes the department must evolve to meet the challenges of both a restructured electric utility industry and the previously deregulated telecommunications industries. As each of these formerly fully regulated fields move to compete in the marketplace, mergers among and between these industries will redefine how every business and consumer utilizes their services. The Committee recommends an expansion of the department through licensing fees on generation facilities and on new assessments from those facilities. Further the Committee outlines a structure for an executive commission on deregulation which will have the authority to study each of the major power and communications industries which in the future will have both regulated and deregulated components. A focus on the Commonwealth's role in expanding markets in these industries while protecting consumers is recommended.

III) **Securitization of Stranded Costs**

In conjunction with section five of the legislation which, among other provisions, allows electric companies to recover certain categories of stranded costs after aggressive mitigation and department approval, this section outlines a means of stranded cost mitigation whereby electric companies would be allowed to essentially refinance a portion of their above market costs, namely those associated with purchase power contracts and generation facilities, at much lower rates than would otherwise be available to the companies individually.

The legislation authorizes a public trust where any allowed access charges collected by the electric companies would be deposited and used to back bonds, the proceeds of which could be used by the companies to buy-out, renegotiate or otherwise pay off above market purchase power contracts, and pay off above market debt associated with their generation facilities. The bonds would be sold as pure debt securities backed by the legislation's guarantee of the continued collection of stranded cost access charges for a set period of time. As such, they would likely receive the highest possible rating on the bond market, resulting in a significantly lower cost of capital, which in turn would be passed onto the ratepayers. The bonds would in no way be backed by the full faith and credit of the Commonwealth and would be reconciled every two years so that the bonds are used to pay off actual, rather than estimated, stranded costs associated with these assets as determined by the department.

The Committee recognizes the House and Senate Ways and Means Committees will separately review the Committee's proposal and offer further input on this mitigation measure to ensure its effectiveness during the transition to a competitive market.

IV) Transmission Issues

The transmission of electricity from generation facilities to distribution companies and ultimately to consumers will continue to be regulated by the federal government over the coming years. The federal government, through the Federal Energy Regulatory Commission, has issued an order which opens up the transmission grid with non-discriminatory rates and policy which encourages the development of an electricity highway, so to speak, over which any generation facility can send its power to both wholesale and retail customers. Such a system might be run by an independent systems operator, which is currently being developed by the New England Power Pool, currently consisting of the investor owned utility sector of the electric power market.

The Committee is recommending oversight of such an independent systems operator by the department of public utilities and oversight of pricing within the retail market by the division of energy resources. Such transmission monitoring will ensure state involvement in an area which may otherwise be solely dictated by the federal government. Likewise, monitoring of market prices will allow consumers to receive clear signals as to the direction of such prices as they negotiate power contracts with generation facilities in the future.

V) Provisions Restructuring the Electric Utility Industry

This section also outlines the basic parameters for the department of public utilities in implementing electric utility restructuring over the coming years. The legislation authorizes the start of retail access by January 1, 1998, the functional unbundling of electric companies into their basic component

parts, generation, transmission and distribution companies, and encourages the development of the generation market by encouraging electric companies to sell off, or divest, their non-nuclear generation assets, an act which also helps determine stranded costs through the process of market valuation through sale. In addition, this section mandates a ten percent (10%) across the board rate reduction for all Massachusetts customers who initially choose to remain with their electric utility based on rates in effect during the year 1996.

Mandatory Rate Reduction for All Customers

A ten percent rate reduction is recommended through this section for each customer initially choosing to remain with their utility by accepting a standard service package also mandated by this legislation. Such reduction is based on 1996 rates and would be frozen for one year from January 1, 1998. The standard service package would be available for four years and would allow a customer that period of time before a choice on the market must be made. However, should a customer choose on the market and still ultimately need electric service due to a failure of the contract, each distribution company must provide default service to those customers through spot market prices until such customer again chooses a generation company.

Stranded Cost Recovery

This section authorizes the recovery of stranded costs through a non-bypassable access charge after an initial audit of the DPU's records as they relate to stranded costs and after the electric companies have mitigated such costs through divestiture, renegotiation of above market purchase power contracts and possibly securitization, for example. The department would ultimately have the authority through adjudicatory proceedings to determine, after mitigation, the level of stranded cost recovery allowed for each utility. A reconciliation of estimated to actual stranded costs would occur every two years and stranded cost recovery would only be allowed for ten years. The department's initial determination of allowed stranded costs for a company would result in a cap for that company, through an access charge which would decline over time as the assets are paid off.

A very important mitigation effort is also encouraged for independent power producers which desire to sell their power in the retail market. The Committee is recommending that these IPP's renegotiate their above market contracts as a condition to receiving a retail license and as a condition for eligibility for a manufacturer's tax exemption under chapter 59 of the general laws once any current payment in lieu of taxes agreement expires or, in the case were no PILOT agreement exists, the ten year ramp down period expires.

Most utility cost subject to recovery would have had to have been incurred by the utility before August 16, 1995, the date of DPU Order 95-30, and a date certain in which the utilities were put on notice that the previous cost-plus rate recovery system was to be replaced by market valuations for electricity. However, as a means of aiding the transition of the utilities' most important asset, its workers, into the competitive market, the Committee is recommending that costs associated with job retraining, early retirement packages, health care, and severance packages be eligible for recovery for a period of seven years after the beginning of retail competition. In addition, cities and towns which currently site generation facilities which may lose value upon the advent of the retail market would also have the benefit of receiving property taxes or payments in lieu of taxes continue for ten years, although at a declining rate toward the facilities' actual market valuation. Each electric company will be allowed to collect stranded costs for these purposes going forward for the times specified.

Aggregation

These provisions allow municipalities to aggregate electricity demand on behalf of their citizens in an effort to more effectively bargain for the cheapest possible price. The Committee is recommending this aggregation be strictly voluntary and that other means of aggregation are available to consumers, particularly through private cooperatives. In addition, both corporate and non-profit aggregation would be allowed under these provisions, except for affiliates or members which currently are served by municipal light plants.

VI. Siting Reform

This section would reform the Energy Facilities Siting Board to limit their review of new generation facilities to an environmental impact analysis, removing the board's current power to determine if a facility is both needed and being developed at the least possible costs, with such determinations to be left to the market.

VII. Property Tax Protections for Municipalities

This section outlines the parameters for agreements for payments in lieu of taxes and other property taxation mechanisms during the next ten years. As facilities are assessed in the future, not on their book value (cost minus depreciation), but rather their market value, many facilities currently sited will drop in value causing serious concern to those communities whose facilities provide a significant portion of a community's tax base. This section provides for payments in lieu of taxes to be provided to communities currently siting facilities for a period of 10 years with such payments dropping by 10 percent for each year over the transition. Facilities which are utility owned would not be eligible for any exemption from personal property taxation under chapter 59, however facilities which are independently owned would be eligible if purchase power contracts affiliated with the facility's owners are renegotiated. Further, new

facilities would be eligible for such an exemption and would otherwise be taxed based on their market value.

VIII. Consumer Protection

This section reaffirms the power of the attorney general to treat generation companies the same as other companies for the purpose of protecting against unfair practices under chapter 93A. Further, the department of public utilities would be granted the power to issue licenses for generation companies and other suppliers and charge fees for such licenses. The department is authorized to provide technical assistance to municipalities and others needing such assistance as the market is developed. Low income subsidies are continued. Further the department would have the power to levy fines for violations of any of their rules and regulations including new regulations regarding "truth in rate advertising" and those marketing "green" power, so-called.

IX. Municipal Light Departments

This section exempts municipal light departments from the provisions of the act, unless a light department wishes to sell power beyond its service territory, in which case it must reciprocate by opening its service territory to other suppliers.

X. Environmental Protection

This section outlines provisions for generation performance standards, a renewables fund of one mill per kilowatt hour to foster renewable technologies in the Commonwealth and the continuation of demand side management programs for a period of five years, albeit on a bid-based system.

XI. Other Employee Related Issues

This section would allow a utility employee to take benefits under chapter 151A, Sections 71F and 71G (the "Plant Closings" statute, so-called) if they exceeded the benefit package offered by the employee's company upon termination of employment for reasons not the fault of the employee.

XII. Other Statutory Changes

This section recommends other technical changes to chapter 164 originally advocated by the department but adds a provision exemption energy related purchases from the provisions of chapter 30B.

Appendix B

The second appendix contains changes to the enabling statute for the Massachusetts Municipal Wholesale Electric Company. The Committee takes no position on these changes but wishes to forward

them to the Joint Committee on Government Regulations through the filing of this package for their perusal in the context of this act.

PART ONE. COMMITTEE REPORT

I. Introduction

Traditionally characterized by a monopoly structure, competition has gradually been introduced in the generation sector of the electric utility industry over the past twenty years. The movement toward a market based system began in 1978, when Congress passed the Public Utility Regulatory Policies Act (PURPA) which required electric utilities to purchase electricity from non-utility generators if they could produce electricity at a lower cost over the long term, than the utilities themselves. Believing competition could bring further potential benefits, Congress passed the Energy Policy Act in 1992 (EPAct). EPAct called for competition in wholesale electricity markets and mandated that the Federal Energy Regulatory Commission (FERC) implement open access on electric transmission lines owned by the utilities.

EPAct did not address the retail markets, and the decision to competition here was left to the jurisdiction of state governments. Since this time, a number of states have move towards introducing retail competition and customer choice in their electricity markets. legislatures in California, New Hampshire, Rhode Island and Pennsylvania have passed electricity restructuring bills. Over the past two years the Massachusetts DPU has been investigating the implications. Recognizing these events and the importance electricity has in the Massachusetts economy, the Joint Committee on Electric Utility Restructuring was formed by the legislature to investigate the issues surrounding the introduction of competition in the electricity industry.

Over the past six months the Committee has worked to determine the potential positive and negative aspects of electric utility restructuring. In order to fulfill its mission, the Committee has held fourteen meetings and three public hearings. A list of these hearings and their participants are listed above. The Committee has worked to understand these issues and recommend options for the legislature which would allow for the greatest possible benefits for each citizen of the Commonwealth with least possible adverse impact. This report and attached Legislation incorporate the findings of the Committee.

II. A History of Electric Utility Regulation In the U.S.

The federal, state and local governments share regulatory responsibility over the electricity industry. Local governments have regulated the rates of municipal light companies since they were first created in the 1890s. During the early development of the industry, between 1901-1932 state governments were the sole regulators of private electric companies. Utility regulation by state agencies had been initiated under throughout the late 19th century as state governments sought to regulate burgeoning railroad companies.[1] Many of the same agencies/commissions and principles were applied to electric utilities. The concepts, of "fair rate of return" for utility investors and "businesses affected with the public interest" were developed throughout this period. From these foundations came the concept of cost-of-service regulation /rate-of-return regulation which have been the predominate method of state regulation throughout the past sixty years.

In the 1920s, as electric companies grew larger and their businesses crossed state lines, the electric power industry became recognized as a natural monopoly in interstate commerce, subject to federal regulation under the Commerce Clause of the Constitution. By the early 1930s the federal government had taken a keen interest in regulating private companies as well as creating a number of federally-owned electric systems. Over the next decade, the government created several large federally-owned electricity systems and passed several comprehensive laws regulating private companies.[2] These laws have served as a foundation for the electricity industry. The following is a list of the most important federal laws pertaining to the electricity industry.

Public Utility Holding Company Act of 1935 (PUHCA)[3]

PUHCA was enacted to break up the large and powerful trusts that controlled the nation's electric and gas distribution networks. PUHCA gave the Securities and Exchange Commission the authority to disband the trusts and to regulate the reorganized industry in order to prevent their return. The (corporate) organizational structure of multi-state holding companies is defined under PUHCA. Five investor-owned

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[1] The Massachusetts Department of Public Utilities was created in 1871.

[2] Tennessee Valley Authority Act of 1933 (Public Law 73-17), Rural Electricifiction Act of 1936 (Public Law 74-605); and Bonneville Project Act of 1937 (Public Law 75-329)

[3] Public Law 74-333

utilities in Massachusetts are wholly-owned subsidiaries of holding companies . They are: Fitchburg Gas and Electric Light Company, a subsidiary of UNITIL Corporation; Eastern Edison Company, a subsidiary of Eastern Utilities Associates; Massachusetts Electric Company and Nantucket Electric Company, subsidiaries of New England Electric Systems; and Western Massachusetts Electric, a subsidiary of Northeast Utilities.

Federal Power Act of 1935 (Title II of PUHCA)[4]

This Act was passed to provide for a Federal mechanism, as required by the Commerce Clause of Constitution, for interstate electricity regulation. Under the FPA, the Federal Power Commission, which in 1969 became the Federal Energy Regulatory Commission (FERC), is authorized to regulate wholesale power and transmission tariffs.

National Energy Act of 1978[5]

This Act was signed into law in November of 1978 and includes five different statutes: the Public Utility Regulatory Policies Act (PURPA), the Energy Tax Act (Public Law 95-618), the National Energy Conservation Policy Act (Public Law 96-619), the Powerplant and Industrial Fuel Use Act (Public Law 95-620), and the Natural Gas Policy Act (Public Law 96-621). Passed as a result of the Arab oil-producing nations' ban on oil exports to the United States, it general purpose was to ensure sustained economic growth while also permitting the economy time to make an orderly transition from the past era of inexpensive energy resources to a period of more costly energy.

Public Utility Regulatory Policies Act of 1978 (PURPA)[6]

PURPA was passed in response to the unstable energy climate of the late 1970s. PURPA's purpose was to promote conservation of electric energy. Additionally, PURPA created a new class of nonutility generators, small power producers, from which, along with qualified cogenerators, utilities are required to buy power.

Clean Air Act Amendment of 1990 (CAAA)[7]

These Amendments established a new emissions-reduction program. The goal of the legislation is to reduce annual sulfur dioxide emissions by 10 million tons and annual nitrogen oxide emissions by 2 million tons from 1980 levels for all man-made sources. Generators of electricity will be responsible for large portions of the sulfur dioxide and nitrogen oxide reductions. The program instituted under the Clean Air Act Amendments of 1990 employs a market-based approach to sulfur dioxide emission reduction, while relying on more traditional methods for nitrogen oxide reductions.

Energy Policy Act of 1992 (EPACT)[8]

This Act created a new category of electricity producer, the exempt wholesale generator, which narrowed PUHCA's restrictions on the development of nonutility electricity generation. The law also mandated that FERC open up the national electricity transmission system to wholesale suppliers on a case-by-case basis.

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[4] Aug. 26, 1935, ch. 687, Title II, 49 Stat. 838

[5] Public Law 95-617 - 95-621

[6] Public Law 95-617

[7] Public Law 101-549

[8] Public Law 102-486

PURPA and EPAct created several categories of power generation ownership. The distinctions among the various suppliers have important regulatory implications. Indeed, the fact that each class of generator receives different regulatory treatment has been an important issue in the restructuring debate. Below is a description of the types of ownership. These will be used throughout the report.

Types of Generating Owners[9]

Electric utilities , in general, are defined as privately-owned companies and public agencies (federal, local and state) engaged in the generation, transmission, and/or distribution of electric power for public use. There are four basic types of utility ownership: investor-owned, federally-owned, cooperatively-owned (small rural farms and communities), and other types (municipals, public power districts, state authorities, and other state organizations).[10] Electric utilities are often referred to as public utilities.

Non-utility Generators **(NUGs)** are the entire group of power generators that are not affiliated with the utility that transmits, distributes, and sells to final customers in a particular area. In 1994, nonutility generators accounted for about 7 percent of U.S. generating capacity. The distinction between utilities and nonutility generators can be confusing. For one thing, nonutility generators may be owned by electric utilities (and many of them are); however, with the exception of qualifying facilities that are partially owned by utilities, those nonutility generators may not sell power within the service territory of the parent company. For another, to some extent, every firm that sells electricity is an electric utility under the Federal Power Act and, consequently, subject to oversight by the FERC. It is easiest to think of a non-utility generator as a company that does not sell to final customers in its function as a generator.

Qualifying Facilities **(QFs)** are nonutility generators that meet certain criteria spelled out in PURPA. Qualifying facilities include cogenerators, firms that produce electricity and other forms of useful thermal energy as the result of industrial processes. Qualifying facilities also include small power producers that use a renewable resource (such as water, solar energy, or biomass) to generate electricity. PURPA required utilities to purchase the power produced by qualifying facilities at price at or below the utility's avoided cost - what it would have cost the utility otherwise to generate or purchase the additional electricity. PURPA left it to individual states to set the avoided cost. Some states, such a California, set the avoided cost quite high in the beginning, thus encouraging cogeneration and generation with renewable resources.

Independent Power Producers **(IPPs)** are non-utility generators that are not qualifying facilities. After PURPA took effect, qualifying facilities sprang up and began selling to utilities; at the same time, several state utility regulators started requiring competition in the purchase of generation, and FERC began to encourage competitive generation among non-qualifying facilities by allowing those generators to charge market-determined rate for their power. This led to the development of independent power producers, entities that were not qualifying facilities but that could compete in selling generation capacity. IPPs could be owned by a utility, as long as the IPP was not selling to the parent utility's final customers. As competition grew, companies that wished to enter the generation market were somewhat discouraged by the filing and reporting demands of the PUHCA.

Exempt Wholesale Generators **(EWGs)** were established under the EPAct of 1992 to address the problem of complex filing and reporting requirements of PUHCA. EWGs were exempt from PUHCA, but not exempt from other regulatory oversight, including that of FERC. Any facility wishing to be an EWG must obtain permission from FERC, which is done, in part, by convincing FERC that the EWG subsidiary does not share cost accounts with the parent utility.

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[9] Definitions taken from Brennan et al., *A Shock to the System - Restructuring America's Electricity Industry* (Washington , DC: Resources for the Future, 1996)

[10] EIA, *Electric Power Annual 1995*, Volume II, DOE/EIA-0348(95)/2 (Pittsburgh: U.S. Gvernment Printing Office, December 1996)

Jurisdiction over different aspects of the generation, transmission and ultimate distribution of electricity is shared by federal and state government. Currently, federal statutes rest regulatory authority over aspects of the electric utility industry with the FERC.[11] In general, the Commission maintains authority over wholesale sales of electricity through interstate transmission lines. Among the aspects of energy production and transmission under the FERC's domain are a) sales of electricity between utilities, b) sales of electricity between non-utility generators and utilities, c) transmission rates in interstate commerce, d) utility mergers, and e) siting gas pipelines.[12] The federal government also maintains jurisdiction over nuclear power plants, but through a separate regulatory entity, the Nuclear Regulatory Commission.[13] In addition, the Securities and Exchange Commission maintains some power over the industry as a whole through securities regulation.[14] The siting of generators and retail sales of electricity over utility distribution wires are under the jurisdiction of state regulatory bodies including the Massachusetts Department of Public Utilities (DPU).[15]

Questions over jurisdiction have arisen many times throughout the history of the industry, with states wishing to assert as much control as possible over the plants and wires within their borders. In anticipation of state action to authorize retail competition in the electric industry, the federal government has proposed new criteria in effort to further define the jurisdiction between these levels of government. With electric utility restructuring and the opening of access to interstate transmission lines, out-of-state generators will have a greater opportunity to produce electricity for customers located across the country (however, transmission capacity along the New York/New England border may restrict significant reliance by Massachusetts customers on generators located outside of New England). The FERC, through Order 888[16], ruled that if unbundled retail transmission in interstate commerce occurs either voluntarily by a public utility or as a result of a state retail access program, the Commission has exclusive jurisdiction over the rates, terms and conditions of unbundled retail transmission in interstate commerce by public utilities, up to the point of local distribution.[17] The definition of a "local distribution facility" will be decided through the use of seven indicators. The local nature of a distribution facility, under these indicators, will

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[11] 42 U.S.C. § 7171

[12] Testimony of Elizabeth Moler, Chair, FERC : Meeting of Federal/State Jurisdictional Issues Before the Joint Committee on Electric Utility Restructuring, Massachusetts Legislature, November 7, 1996

[13] 42 U.S. C. § 5842

[14] 15 U.S.C. § 79

[15] Mass. G.L. c. 164§ 69 *et seq.*

[16] Federal Energy Regulatory Commission, *Promoting Wholesale Compeition Through Open Access Non-Discriminatory Transmission Services By Public Utilities & Recovery of Stranded Costs By Public Utilities and Trasnmitting Utilities*, Docket No. RM-95-8-000 and Docket No. RM94-7-001, Order No. 888, April 24, 1996 61 Fed. Reg. 21,540 (1996)

[17] 61 Fed. Reg. 21,625 (1996)

be determined by a) the close proximity of a facility to retail customers, b) the "radial" nature of the facility, c) the flow of power into, rather than away from, the facility, d) the lack of transportation or consignment of power to other facilities once the power has entered a particular distribution facility or system, e) the consumption of the power by customers in a comparatively restricted geographic area, f) the location of meters (which usually are based at the transmission line/distribution facility interface to measure flows of electricity into a facility or system) and g) the reduced voltage usually inherent in a distribution system.[18] Should the Commonwealth authorize retail access, the analysis as to what constitutes a "local distribution facility" will be left to the determination of state regulatory bodies.

Inherent in state jurisdiction over distribution facilities is the responsibility of the state to maintain oversight of reliability by continuing regulation of the wires which carry power to customers homes and businesses. Likewise, the federal government, through its continued regulation of interstate transmission wires, will maintain oversight over the reliability of the grid though its jurisdiction over any independent systems operator which develops in the wake of Order 888.[19] Although dispatch of electricity from in-state generators is currently within the jurisdiction of the Commonwealth, under a deregulated generation sector, the demand for electricity will determine if and when generators dispatch their product over the wires.

In addition to jurisdiction over distribution facilities, the Commonwealth would maintain its jurisdiction over other important areas of the electric industry. Those areas include utility demand-side management and other conservation programs, the siting of in-state generators, and subsidization of rates for low-income rate payers, for example.[20] In addition, it should be noted that although oversight of the generation sector of the industry would lessen if retail access were authorized, statutes and regulations governing issues of consumer protection are, and would continue to be, within the Commonwealth's jurisdiction.

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[18] 61 Fed. Reg. 21,625 (1996)

[19] 61 Fed. Reg. 21,596 (1996)

[20] 61 Fed. Reg. 21,626, *see Note 544*

III. The Impetus for Competition

Due to the high costs of building infrastructure, generation and transportation of electricity has long been considered to be most efficiently provided by one firm - a natural monopoly. In return for making the necessary investments, electric utilities were guaranteed franchise territories by state governments. To protect customers from monopoly pricing, states regulated retail rates and the federal government regulated wholesale rates. Rates were set under cost-of-service or rate-of-return regulation.[21] These arrangements have prevailed for the past sixty years. Over the past two decades, however, the general consensus on the merits of highly-regulated, monopoly franchises has waned. Several countries, such as Argentina, Chile, Norway, Sweden, and the United Kingdom, have already introduced some level of retail competition. Significant electricity price differentials, technological improvements, and deregulation experiences in other industries have contributed to a general shift in the United States toward competition in wholesale and retail markets for electricity.

The successful experience of restructuring in other historically monopolistic industries has influenced electricity restructuring in three ways. First, observers have been encouraged by the outcome of deregulation in other industries. While not perfect, deregulation of the airline, telephone, and natural gas sectors has resulted in increased customer choice, lower prices and technological innovation.[22] Second, lessons learned from the deregulation of these industries are helping policy-makers, analysts, and regulators design a competitive electricity market. Third, events in the case of gas and telecommunication industries have had a direct impact on the electricity industry. For example, the Federal Telecommunications Act of 1996 permits electric companies to invest and participate in telecommunication markets. Foreseeing further convergence of their markets in the future, a number of electric, gas, and telecommunications companies have formed partnerships. Similarly, the introduction of wholesale competition in the gas industry, beginning in the late seventies and concluding with the passage of FERC's Order 636, contributed to the increased use of natural gas in electricity generation.[23]

Since the passage of the PURPA in 1978, there have been significant technological advances in generation. These improvements have altered the way developers and investors think about electricity generation and have removed some of the market barriers to new construction. In particular, the development of smaller, highly efficient gas (combined cycle) turbines has affected the economics of generation and the foundation that cost-of-service of regulation was, in part, based upon. Typically, large generation facilities (1,000 MW) were built in order to exploit the economies of scale. The new gas turbines

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[21] This means that rates are set so that the revenues from raetail sales of electricity will cover the full costs of supplying that electricity, including generation, transmission and distribution costs, plus a fair rate of return on invested capital.

[22] See Zander Arkin, "The Benefits of Competition," Harvard University, John F. Kennedy School of Government Case Study, 1995.

[23] FERC Order 636, 18 CFR Part 284

can be as small as 10MW and still be cost effective. The smaller size allows the facility to be located closer to load and may serve the needs of only one large customer. Some of these facilitiesmay be located on-site. These are generally referred to as distributed generation.[24] The costs of building and operating new facilities may be cheaper than the capital cost and the operating and maintenance costs of some existing nuclear and fossil-steam facilities. In addition, newer technology has the advantage of meeting air emissions standards more easily and cheaply.

In addition to contributing to technological improvements, activities related to PURPA resulted in an increased number of alternative suppliers in the generation market. Some states, including Massachusetts, encouraged competition among generation sources by requiring incumbent utilities to purchase power from third-party generators. By the late eighties, many third-party generators and large customers were eager to directly participate in a competitive wholesale market, but were unable to do so because of federal restrictions placed on transmission access. Their requests were answered when, in 1992, Congress passed the EPAct, mandating that the Federal Energy Regulatory Commission implement wholesale competition. Despite these regulatory changes, capacity surplus and low demand growth have discouraged the development of new facilities in Massachusetts over the past eight years. However, in anticipation of a competitive electricity market, a number of non-utility generators, industrial companies and large customers have demonstrated interest in building facilities which would utilize new gas technologies. A number of environmental groups have expressed an interest in the smaller renewable and gas combustion facilities being built as replacements for the state's older fossil fuel facilities. Existing state law greatly limits the ability of these parties to pursue these options.

As the rules and policies for wholesale competition have evolved, policy-makers and consumers from around the country have become increasingly aware of retail price differences among various providers. Wide variations exist not only among regions and states, but also at the intrastate level. In higher cost states, such those in the Northeast, average prices can be as much as three times as that of other states.

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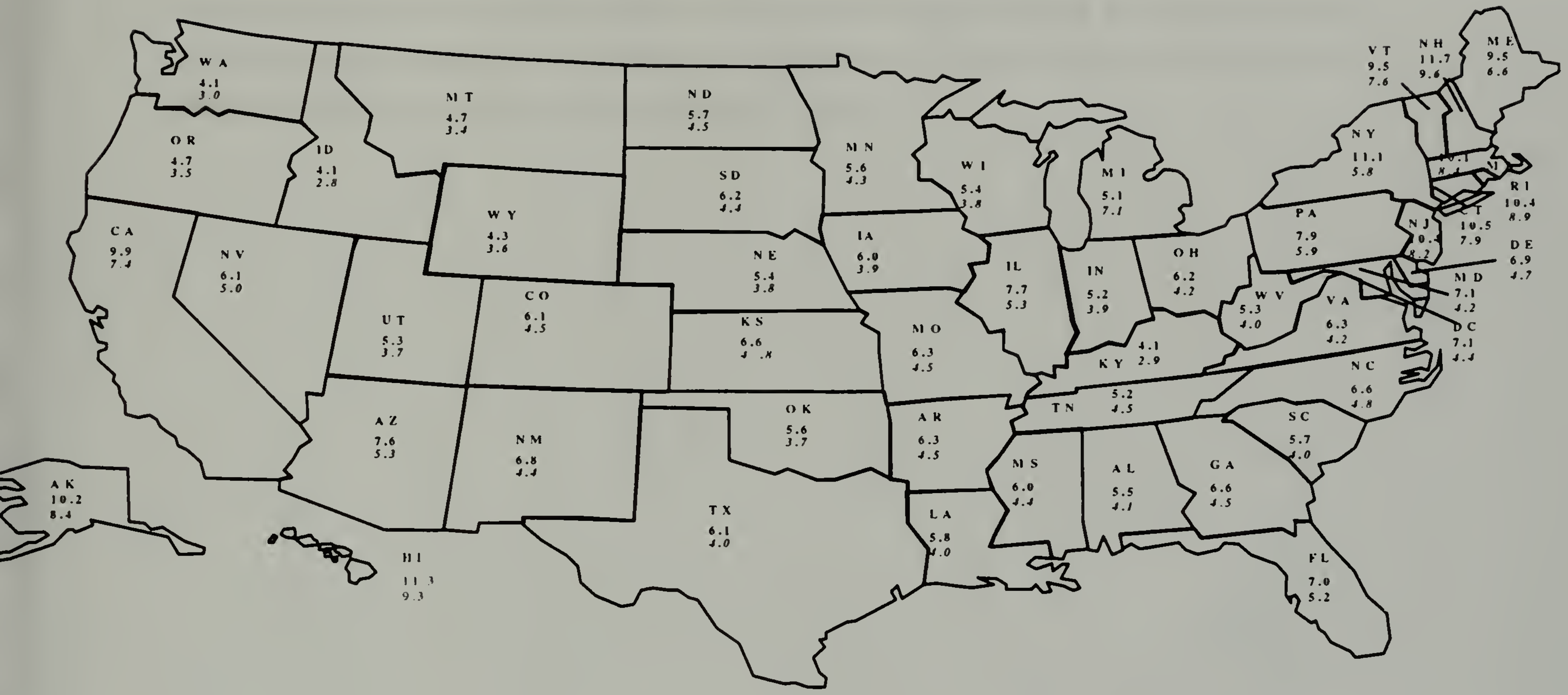
[24] Some industry participants believe that distributed generation will have a larger effect on the electricity industry than is currently envisioned. They have argued that small turbines will increasingly be used by individual customers. See, Massachusetts Department of Public Utilities, Docket 96-100, *Investigation by the Department of Public Utilities Upon Its Own Motion Commencing a Notice of Inquiry/Rulemaking, Pursuan to 222 C.M.R. §§ 2.00 et eeq., establshing th eprocedures to be followed in electric industry restructuring by electric companies subject to G.L.c. 164* August 19, 1996, testimony on distributed generation..

Average Revenues from Electricity Sales to all Retail and Industrial Customer by State, 1995
(cents per kWh)



Residential Rates in Regular Font

Industrial Rates in Italics

Source Energy Information Association, Electric Power Annual 1995, Volume II, DOE/EIA-0347(95)/2 (Pittsburgh U S Government Printing Office,1996), Table 7

Although price is not the only factor driving retail competition, it is a critical one. In fact, the states which have been most active in the restructuring debate at the retail level include those with the highest prices. These include California, New Hampshire, Rhode Island, Pennsylvania and Massachusetts. Similarly, those states with lower prices such as Florida and South Carolina are taking a 'go slow' approach to retail competition. Rate differences across utilities within state boundaries also contribute to a state's interest in pursuing competition.

Electricity prices can affect economic development. Clearly, uncompetitive prices of such an important production input can have a negative impact on a state's economy. the electric utility industry contributes to 3.4% of the state's GDP. For many companies, electricity is a major component (along with labor, taxes, etc.) in overall expenditure. With resident companies such as paper mills, defense contractors and manufacturing firms, Massachusetts is not immune to these competitive pressures from states with

lower electricity rates.[25] Although the estimates of job growth vary greatly, the creation of new energy companies, combined with the possibility of existing industries benefiting from lower electricity prices production, may contribute to employment growth. Extending the benefits of retail competition to all consumers could assist overall economic development of the state.

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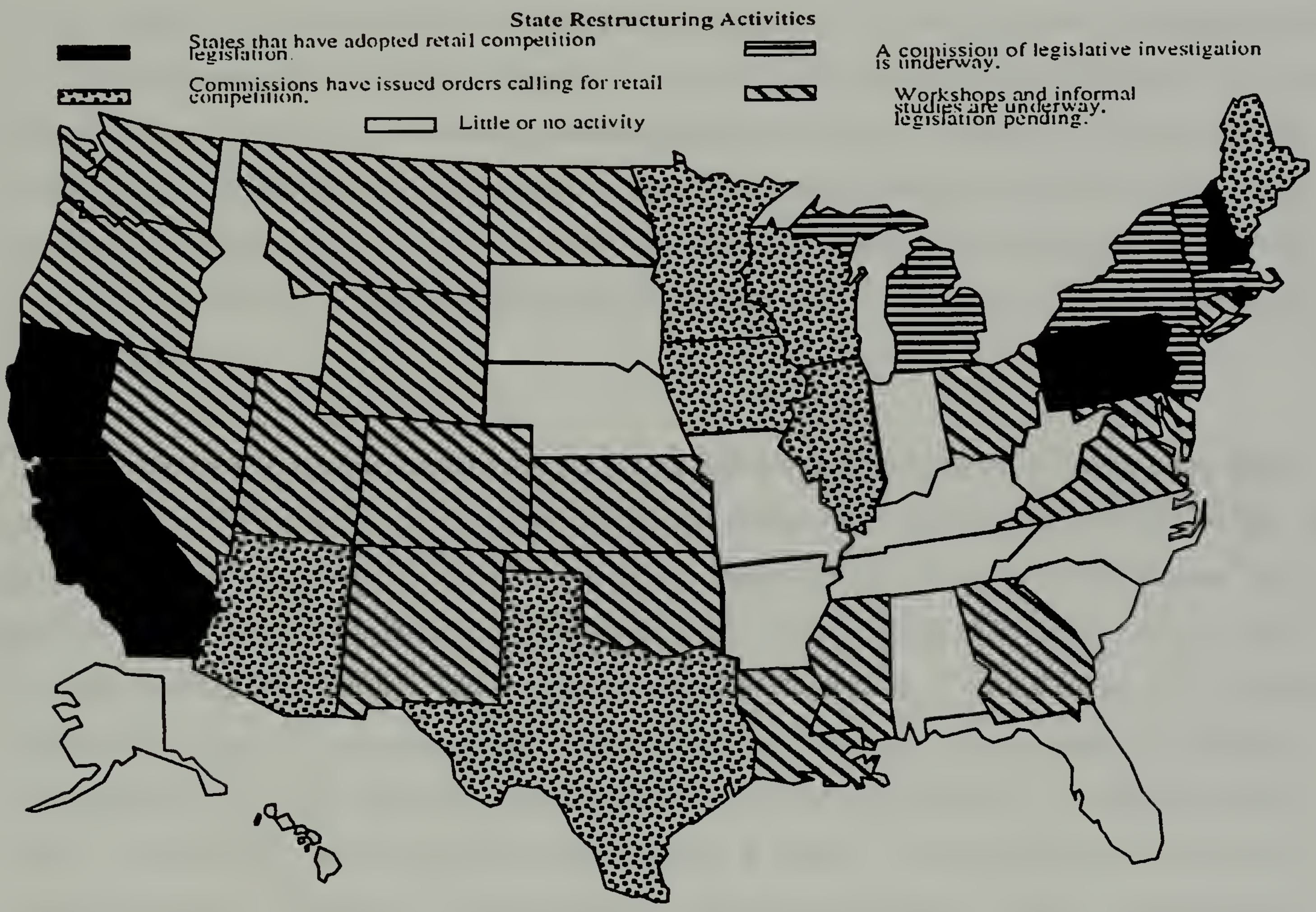
[25] According to the Massachusetts Department of Employment and Training,, the number of manufacturing jobs in the state declined 33.6% (224,200) between 1984-1996.

IV. Activities in Other States & Countries

Electric utility reform is under consideration in most state governments. Many regulatory agencies and legislatures have initiated investigations into the potential benefits and negative consequences of retail competition. Several states have mandated pilot programs to 'test' retail competition, while others have introduced comprehensive restructuring proposals. Thus far, the states with the highest electricity prices, typically coastal states, are the most active.


State Restructuring Activities

States that have adopted retail competition legislation.
Commissions have issued orders calling for retail competition.
Little or no activity
A comission of legislative investigation is underway.
Workshops and informal studies are underway. legislation pending.

In 1996, the legislatures in California, New Hampshire, Rhode Island and Pennsylvania passed laws to introducing competition into their retail electricity markets. A brief description of these laws follows.

In April of 1996, the New Hampshire legislature adopted a law which requires all utilities to submit rate restructuring plans and mandates that the Public Utilities Commission file annual reports on the process of restructuring.[26] In addition, the law established a retail competition pilot program and requires the full implementation of retail competition by January 1, 1998 (a six month extension is available if the

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[26] New Hampshire House Bill 1392 of 1996

Commission deems this is necessary). The legislature recognized that utilities should be allowed to recover stranded costs, and authorized the Commission to determine the appropriate level of recovery.

The Rhode Island "Utility Restructuring Act of 1996" was signed into law in August of 1996. It mandates retail wheeling for all customers by July 1, 1998.[27] The law deregulates generation and requires retail wheeling to be phased in over one year beginning with large customers compromising up to 10% of a utility's load on July 1, 1997. Utilities have an opportunity to recover prudently incurred stranded costs through a transition charge of 2.8 per kWh levied on every customer (non-bypassable) from the beginning of retail access, through the end of 2000, when it is to be replaced by a PUC-determined stranded cost recovery charge. Most stranded costs must be recovered by the end of 2009, but nuclear decommissioning costs and uneconomic purchased power contract costs may be recovered until fully satisfied. The law requires market valuation for non-nuclear generating plants in the form of lease, sale, spin off, or other method of disposing of at least a 15% interest in a utility's non-nuclear generating facilities. Utilities must file restructuring plans with the PUC, which are to include proposals for transferring the ownership of generation, transmission, and distribution facilities to separate affiliates of the distribution company, and unbundling of rates.

California's legislature unanimously passed the nation's first comprehensive restructuring measure in August, 1996. [28] The legislation creates non-bypassable competition transition charge (CTC) that allows utilities the accelerated recovery of stranded investments, including costs associated with purchased power contracts, certain nuclear-related costs, and displaced utility employee-related transition costs. This bill further intends for a 10% rate reduction for consumers through the process of securitization. This is simply a monetization process in which strandable costs are identified, removed from the utility's balance sheet, recovered through a customer surcharge that is transferred to a trust, and refinanced in the capital markets at a lower cost of funds than the utility's embedded cost of capital. Consequently, the lower cost of securitization has the potential to create economic benefits for rate payers through a negotiated rate reduction. In California, these state revenue bonds are authorized up to $10 billion and allow for a lower interest rate of 7% rather than 11%.

Other provisions of the bill include aggregation on a voluntary basis; a statewide, non-bypassable charge to fund energy efficiency, renewable energy development, low-income services, and long term R&D; a five-member oversight board to supervise the Independent System Operator and Power Exchange; a

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[27] Rhode Island House Bill 8124 of 1996

[28] California Assembly Bill 1890 of 1996

regional compact with other western states for reliability; and nuclear decommissioning costs of public utilities, which are guaranteed for recovery, but are not part of the stranded cost calculation.

In November of 1996, the General Assembly of Pennsylvania passed a bill which authorizes the issuance of "transition bonds" to reduce stranded costs through securitization.[29] This bill requires that Pennsylvania utilities file restructuring plans that will provide for pilot programs leading to full retail access, an assessment of potential stranded costs and how the utilities plan to mitigate and to resolve those stranded costs. Stranded costs may include utility owned generation, regulatory assets, nuclear decommissioning expenses, non-utility generating contracts, and buy-outs or buy-downs of non-utility generating contracts. The utility has the duty to mitigate all costs to a practical extent.

Other provisions of the bill include the required licensing of all generators selling to Pennsylvania consumers; the commitment that Pennsylvania will work with other regional states in the power pool; the development of an Independent System Operator to manage the transmission system; and the establishment of statutory authorization for consumer education programs and renewable resource programs. Furthermore, retraining, early retirement, and outplacement services for displaced labor are included as recoverable transition costs.

Restructuring reforms in wholesale and retail markets have been also been implemented in a number of other countries. Argentina and Chile were the first to introduce reforms when both countries instituted pool systems for their respective bulk power markets. Since that time a number of countries have introduced wholesale level, and most of these have now introduced some level of retail competition, including Sweden, Norway , Finland, Victoria (Australia), Spain, Alberta (Canada) and of course Britain. In addition, the Commission of the European Union issued a directorate calling for a gradual liberalization of the European electricity market [30]

The Massachusetts legislature can learn much from the experiences of other countries and other states. For example, Argentinean reforms demonstrated early on that a pool-based model is a workable one. The recent integration of the Swedish and Norwegian electricity markets has demonstrated that a free market can change the pattern of energy demand and flows, and can result in new areas of transmission constraint and capacity. However, the unique characteristics in which these reforms were pursued means that a standard, one-size fits-all design does not exist.

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[29] Pennsylvania General Assembly, Title 66 (Amendment 7697, HB 1509) 1996

[30] General Secretariat of the European Union, *Directive of the European Parliament and of the Council Concerning Common Rules for the Internal Market in Electricity*, June 21, 1996

In addition, the circumstances surrounding the electricity restructuring debate have played an important role in push toward competition. Strong political forces, not merely a drive to reduce electric prices, have weighed heavily against the naysayers in many cases. For example, the political and economic environments in California and Britain were essential factors in the restructuring debates occurring in these jurisdictions. The economic downturn of the early nineties in California, combined with the traditional high energy costs due to its lack of indigenous resources and policy measures, pushed the administration to seek new ways to lower energy costs.[31] In this regard, the California Public Utilities Commission addressed first, natural gas markets and then turned to restructuring the electricity industry. In Britain, restructuring was part of the Prime Minister Thatcher's overall economic and policy plan to introduce market reforms in a number of industries. In most of the foreign cases, the electricity industry was a nationalized company, thus making it easier for the government mandate and implement comprehensive reforms.

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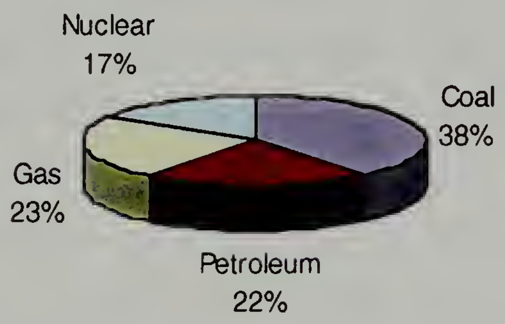
[31] Comments of Daniel Fessler, former Commissioner, California Public Utilities Commission, EAERF Conference, Tokyo, Japan, January 20, 1997. Similar comments made by Commission Greg Conlon of the California PUC, NARUC Winter Meetings, Washington DC, February 24, 1997.

V. A Profile of The Electricity Industry in Massachusetts

In general, the Massachusetts electricity industry can be defined by its relationship with the electricity market in New England. In addition to participating in the coordination of bulk power supply through New England Power Pool (NEPOOL), several of the state's investor-owned utilities and non-utility generators operate in neighboring states. The state is also dependent on out-of state suppliers for energy resources. Massachusetts has no indigenous fuels and therefore, with the exception of renewables, imports fuel for the production of electricity. In addition, some electricity supply is imported from Canada and wheeled from utilities in other states. As market barriers disappear, it has become increasingly clear to policy makers that Massachusetts can not be thought of as "an island." One indication of this is the effect wholesale competition and pending retail competition has had on the state's utilities.

1995 Power Generation By Fuel Type



A list of non-utility and electric utility generation facilities can be found in Attachment One.

Companies

Currently there are eight investor-owned electric utilities operating in Massachusetts. These companies hold franchise territories and are subject to rate regulation by the Department of Public Utilities (DPU).[32] They are as follows, Nantucket and Massachusetts Electric (New England Electric Systems), Boston Edison Company, Western Massachusetts Electric Company (Northeast Utilities), Fitchburg Gas & Electric (UNITIL), Eastern Utilities Association, Cambridge Electric, and Commonwealth Electric (Commonwealth Energy Systems). A map of their franchise territories can be found in Attachment Two. Each of these is a vertically integrated company which generates, transmits and distributes electricity. There are a number of non-utility generators, power marketers and aggregators are active in the Massachusetts market as well.[33]

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[32] DPU rate making authority over electric companies (not including those which are publicly owned) is authorized under G.L. 164 §94.

[33] For a list of non-utility generators in Masschusetts see Appendix I. As of January 24, 1997 FERC had approved the applications of 293 Power Marketers. Many of these have set up offices in Massachusetts or elsewhere in the Northeast. For a complete listing see, .Edison Electric Institute, Regulatory Briefing Service, "FERC Power Marketers by Applicant," January 24, 1997.

are a number of non-utility generators, power marketers and aggregators are active in the Massachusetts market as well.[33]

There are forty municipal light companies in Massachusetts. As such, their rates are set by local officials.[34] Several municipalities own and operate their own generation facilities, however, it is more typical that they jointly own facilities with other municipalities and electric utilities, or purchase power from non-utility generators, through the Massachusetts Municipal Wholesale Electric Company (MMWEC) and electric utilities. MMWEC, the joint action agency for Massachusetts municipal utilities, was created in 1969. The forty municipal electric companies in the state are members. Under Chapter 775 of the General Laws of Massachusetts, MMWEC is a public corporation with the authority to issue-tax-exempt revenue bonds to finance electric power projects and purchases on behalf of its members. MMWEC jointly-owns five generating facilities.[35] To supplement this supply, MMWEC engages in purchase power contracts with other utilities and independent power producers. purchased power is sold at cost to its members. Massachusetts is one of two states in the country (the other is Hawaii) in which there are no rural electric cooperatives. There are no federally-owned power authorities or facilities in Massachusetts.

Rates

Average electric utility rates in Massachusetts range from 6.5 to 9.5 cents per kWh for industrial customers, from 5.5 to 11 cents per kWh for commercial customers, and from 10.5 to 13.5 cents per kWh for residential consumers. Rates charged by municipal utilities xan vary widely. For example, in December 1996, a customer with a 500 kWh bill in Rowley would have paid $29.31, a similar bill would have cost a customer in Holden $50.07 and one in Chester $72.08. Bills from most of the other municipal utilities would have fallen somewher in the $40 - $50 range.[36] As shown in the map in Section IV, electric utility rates in Massachusetts are among the highest in the country. Part of these differentials can be attributed to the state's lack of indigenous fuel, including cheap water power, more stringent environmental standards and a relatively higher cost of living (which effect labor and other costs). Some of these costs are also attributable to poor economic performance by some plants, particularly nuclear facilities.

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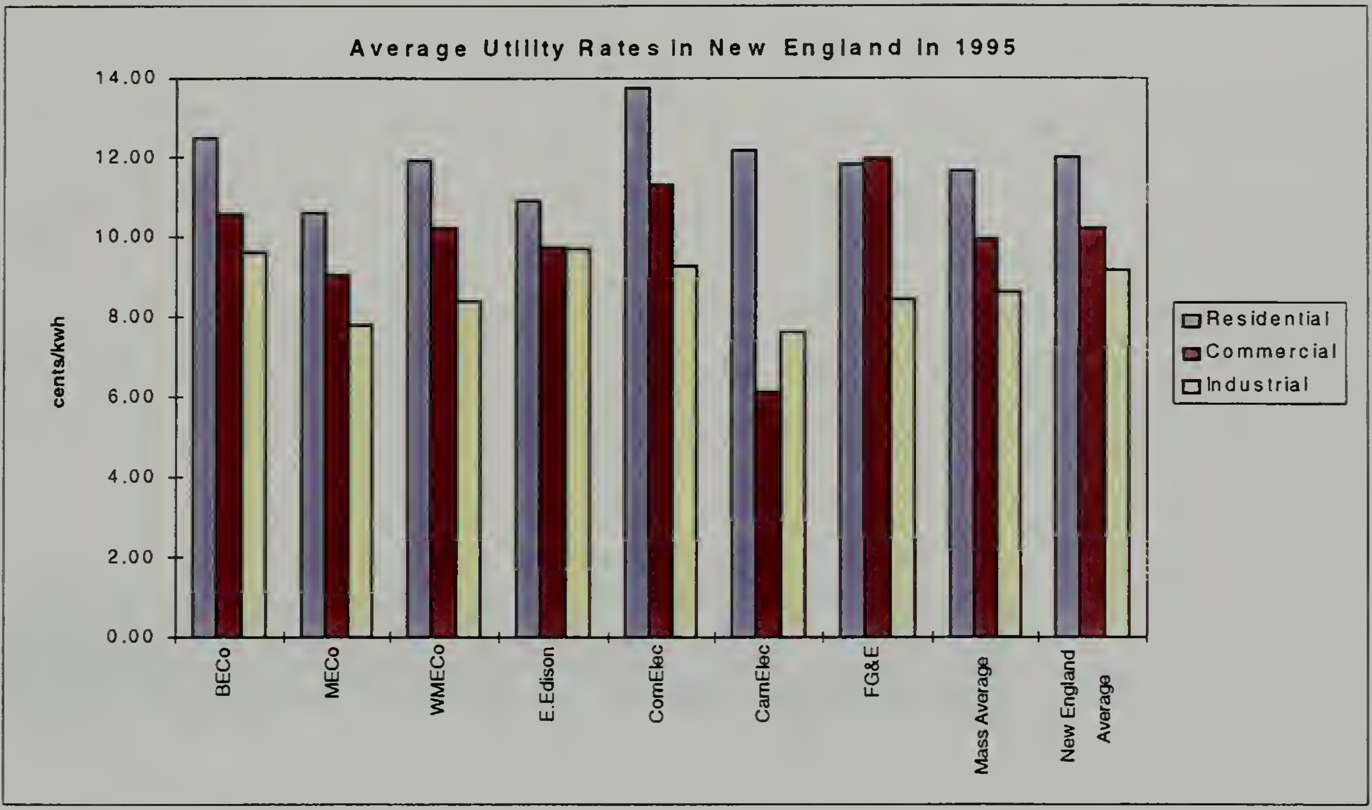
[33] For a list of non-utility generators in Masschusetts see Appendix I. As of January 24, 1997 FERC had approved the applications of 293 Power Marketers. Many of these have set up offices in Massachusetts or elsewhere in the Northeast. For a complete listing see, .Edison Electric Institute, Regulatory Briefing Service, "FERC Power Marketers by Applicant," January 24, 1997.

[34] With the exception of having investigatory powers over discriminatory rates, the DPU does not have ratemaking authority for rates charged by muncipal electric companies. However, the DPU does have some limited authority over facilities construction and load/ssupply forecasting, relationship with NEPOOL, and billing and termination regulations. G.L.c. 164 § 34 et seq. For a completedescription of the DPU's view of its jurisidction see the DPU's May 1 Statement at 31-31.

[35] The five facilities are (MMWEC percentage ownership in paranthesis): Stony Brook Intermediate Unit (Ludlow), 343 MW (90.75%); Stony Brook Peaking Unit (Ludlow) 170 MW (100%); Seabrook Station (NH) 1,150 MW (11.6%); Millstone Unit No. 3 (CT) 1,150 MW (4.8%), and Wyman Unit No. 4 (ME)619 MW (3.7%).



La Capra Associates Boston, 1997: "Estimates of Electric Utility Stranded Costs Associated with the Introduction of Retail Competition in the New Hampshire Generation Service Market." Commissioned by the New Hampshire Public Utilities Commssion.

Financial Performance

In general, uncertainty of the future of the electricity industry has negatively affected the equity of electric utilities in New England. One indication of this is the utilities' weak stock performances relative to the record highs of the overall averages in 1996. While this trend has been experienced by utilities throughout the country, companies in the Northeast appear to be among those that have suffered the most. Table one shows the utilities' relatively weak performance.

Table One. Common Stock Change 1995-96

	Close 12/29/95	Close 12/31/96	% Change 95-96
Dow Jones Industrial	5117.12	6448.27	26.01
Dow Jones Utilities	225.40	232.53	3.163
NYSE Utilities	252.90	259.91	2.772
NYSE Composite	329.51	392.30	19.056
S&P Utilities	202.58	198.81	-1.861
S&P 500	615.93	740.74	20.264
Boston Edison	$29.500	$26.875	-8.898
Commonwealth Electric†	$44.750	$23.500	2.514
Eastern Utilities	$23.625	17.375	-26.455
New England Electric	$39.625	$34.875	-11.987
Northeast Utilities	$24.250	$13.250	-45.361
UNITIL	$20.875	$20.000	-4.192

†Two for one stock split in 1996. *Electric Utility Week*, January 7, 1997, Reprinted with permission from the DRI-McGraw Hill Co.

However, if recent events in

However, if recent events in California are any indication, where electric utility stock prices have risen since the passage of the restructuring law, there is potential for recovery.[37]

Likewise, speculation abounds on some of the debt ratings of investor-owned and publicly-owned electric companies, as calculated by Moody's Investors Service, Fitch Investors Service and Standard & Poor's. The publicy-owned companies appear to be most at risk for a ratings downgrade.[38]

Table Two. ***Moody's Investors Service Senior Debt Rating 1995***[39]

Company	Rating 1995	Type of Debt
Boston Edison	Baa2	Senior Secured
Cambridge Electric (ComElectric)	Baa2	Senior Unsecured
Canal Electric (ComElectric)	Baa1	Senior Secured
Eastern Edison (EUA)	Baa1	Senior Secured
MMWEC	A1	Senior Secured MTN
MassEectric (NEES)	A1	Senior Secured
New England Power (NEES)	A1	Senior Secured
Northeast Utilities	Baa3	Senior Unsecured
Western Mass. Electric Co. (NU)	Baa1	Senior Secured

Massachusetts as Part of a New England Market

Transmission owning companies throughout New England have traditionally operated the system through the New England Power Pool (NEPOOL). Although NEPOOL is undergoing major transformations to accommodate changes taking place in the market, the transmission system will continue to be operated as a regional system. The interconnectedness of the transmission system means that electricity restructuring in Massachusetts can not be viewed in isolation from surrounding states. Although inter utility trading already exists, open transmission access and wholesale competition is likely to increase cross border trades both within New England and with other regions. In the near term, the latter may be limited by interconnection limitations, but it is probable that technology will eventually overcome some of these barriers. The states'

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[37] Benjamin Holden, "California Electric Utility Stocks Recover From Jolt," *Wall Street Journal*, February 19, 1997

[38] Electric Utilty Week, "Fitch May Downgrade Eight Public Power Systems," January 20, 1997, p. 4; *Electric Utility Week*, "S&P, Mooday's See, "Problems for Muni Agencies," December 4, 1996, p.4; *The Electricity Daily*, "S&P: Muni Debt Slide, Driven By Competition, to Continue," January24, 1997, p. 2

[39] Moody's Investors Service, *Moody's Electric Utility Sourcebook*, October, 1995. Moody's Long Term Debt Ratings range from Aaa (best quality) to C (lowest quality). Moody's applies numerical modifiers 1,2, and 3 in each generic rating classification from Aa through B. "1" indicates that the obligation ranks in the higher end of the generic ratings category and so on.

bulk power sales and sales to ultimate consumers indicate that is likely that it will increasingly become move towards a more regional market, even at the retail level.

In addition, sales to ultimate consumers in the Massachusetts and New England are less than those in many other parts of the country. In sales to ultimate consumers, New England ranked ninth out of ten census divisions, while sales in Massachusetts were greater than those in twenty-four states. For example, electricity sales to customers in California and New York totaled 212,605 and 130,471 million kWh respectively.[40]

Table Three. Electric Utility Sales to Ultimate Customers (million kWh)

	Residential	Commercial	Industrial	Other	Total
Connecticut	10,760	10,926	5,913	370	27,970
Maine	3,629	2,835	4,959	138	11,561
Massachusetts	15,988	19,945	9,969	600	46,502
New Hampshire	3,364	3,226	2,286	131	9,007
Rhode Island	2,472	2,625	1,374	165	6,636
Vermont	1973	1,605	1,484	42	5,104
New England	38,189	41,162	25,986	1,447	106,780
U.S.	1,042,565	862,841	1,012,597	95,407	3,013,411

Energy Information Administration, Electric Power Annual 1995 Volume II

Thus, while the market in Massachusetts is greater than that of the rest of the New England states, in coordination with the entire New England region will be a reality for policy makers over the coming years.

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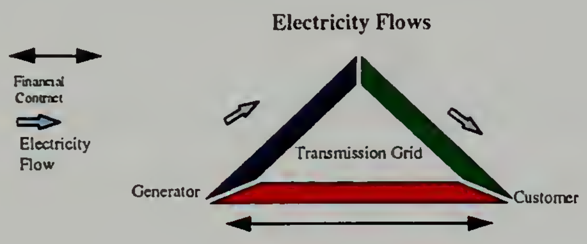
[40] EIA, *Electric Power Annual* 1995, p.23

VI. Structural Change: Market Models

The enactment of the EPAct in 1992 established a new environment in the electric utility industry in the United States to further spur a competitive electric generation and wholesale supply market. The legislation also recognized that access to the nation's electric transmission system is essential to ensure a competitive wholesale electric supply. Over the past few years, FERC has issued a number of regulations which reflect these principles.[41] EPAct and subsequent actions by FERC, did not address the implementation of competition in retail markets. The decision to introduce retail competition was instead left for the states to determine. This section describes existing electric power systems and the proposals for competitive market structure.

The Existing Electric Power System

In order to understand how existing and future electricity markets operate, it is essential to understand the physical laws governing electricity and the transmission system. Two basic rules render electricity different from any other commodity: 1) electrical energy cannot be stored and 2) electricity follows the path of least resistance. The latter point means that electrical flows will go wherever there is capacity available on the transmission system and its delivery path is not always obvious.



Electricity is transported across transmission lines, which are part of an interconnected grid, similar to a highway system.[42] The transmission component of energy delivery ends when the energy is transformed for distribution to the customer. Energy is put into the system by electric generating units that are located at different points on the transmission system. Their activities directly affect the balance of

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[41] 61 Fed. Reg . 21,540 (1996)

[42] The U.S. electric power industry is divided into three interconnection areas, transmission systems are synchronized within these systems. Although there are connections between the three, the systems operate independent of each other.

transmission system. There are three basic features of the transmission industry which warrant special attention , they are:[43]

- Balancing - Because of the physical laws, what goes into the transmission system can be no more than what customers want to take out and, the system must have as much electricity as customers demand. the system needs.
- Power Line Losses - No physical line is a perfect conductor of electricity. Because all substances, to some degree, have resistance (that is they resist the flow of the electrical current), some electrical energy sent through a line is always lost as heat. Sometimes transmission lines can become congested and the line cannot deliver the incremental amount of energy supplied by the generator.
- Loop/Parallel Flow Effects - Because electricity follows the path of least resistance, it makes use of all available routes to get to different points on the system. The flows occur because every time a new parallel route is opened up between two points, the electrical resistance between those two points is reduced.

Because of these conditions, the dispatch of generation and electric transmission are integrally connected. The existing transmission system and the bulk power market were designed to accommodate these characteristics and prevent them from causing problems. The main purpose of the governing structures over these is to maintain reliability and economic efficiency.

Operating standards for transmission systems are established through the North American Electric Reliability Council (NERC). NERC is a voluntary organization, created by the electric utility industry in 1968. NERC's purpose is to promote the functions of reliability as defined by two characteristics:

- Adequacy - The ability of the electric system to supply the aggregate electrical demand and energy requirements of the customers at all times, taking into account scheduled and unscheduled outages of system facilities.
- Security - the ability of the electric system to withstand sudden disturbances such as electric short circuits or unanticipated loss of system facilities.[44]

NERC is made up of ten regional councils, nine of which are interconnected (Alaska Systems Coordinating Council is affiliated) and encompasses essentially all the power systems of Canada, Mexico and the United States. Members work cooperatively to design rules for system operations which meet reliability standards. Standards are then implemented by regional reliability associations. Generation and

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[43] Summarized from Brennan et al.*A Shock To the System*,p.73-78

[44] National Electric Reliability Council, *Transmission Transfer Capability*, Glossary of Terms., (New Jersey: NERC, 1995)

transmission plans of the various electricity systems are evaluated for consistency with power pool and NERC guidelines. In New England region this is the Northeast Power Coordinating Council (NPCC) whose members include the New England states, New York and Quebec. NERC also works to maintain operating and planning for the four system (ERCOT (Texas), Western, Eastern and Quebec) interconnections in North America. Over the past year, NERC has devised a plan to adapt its structure to a competitive market. The changes include making membership more inclusive and mandatory for all suppliers of bulk power; imposing penalities for failure to meet standards; and establishing regional security operators.[45]

NERC REGIONS

ASCC - Alaskan System Coordination Council
ECAR - East Central Area Reliability Coordination Agreement
ERCOT - Electric Reliability Council of Texas
MAIN - Mid-America Interconnected Network
MAAC - Mid-Atlantic Area Council
MAPP - Mid-Continent Area Power Pool
NPCC - Northeast Power Coordinating Council
SERC - Southeastern Electric Reliability Council
SPP - Southwest Power Pool
WSCC - Western Systems Coordinating Council

Traditionally, power pools have coordinated the operations of electric power systems. Power pools are voluntary organizations in which member utilities agree to co-manage their individual transmission use. Power pools occur in three forms: tight pools, loose pools and coordinated marketing areas. As indicated by the classifications, they are distinguishable by the degree of cooperation among members. New England utilities operate within a tight power pool - the New England Power Pool (NEPOOL).[46] It is classified as a tight pool because it provides unit commitment, dispatch and transaction scheduling service. Created in 1971, NEPOOL is a voluntary association of virtually all electric systems in New England, accounting for more than 99.5 percent of electric power production, imports and transmission in the six state region.[47] NEPOOL's primary responsibilities are to coordinate, monitor, and direct the operation of most of the generating and bulk transmission facilities in the region to assure both adequate reliability and maximum practical economy of the bulk power supply. The electric bulk power facilities of all member companies are operated as a single power system by central dispatch of the lowest cost generating and transmission equipment at any given time. Because NEPOOL addresses issues related to bulk power supply and the transmission system, its activities are regulated by FERC.

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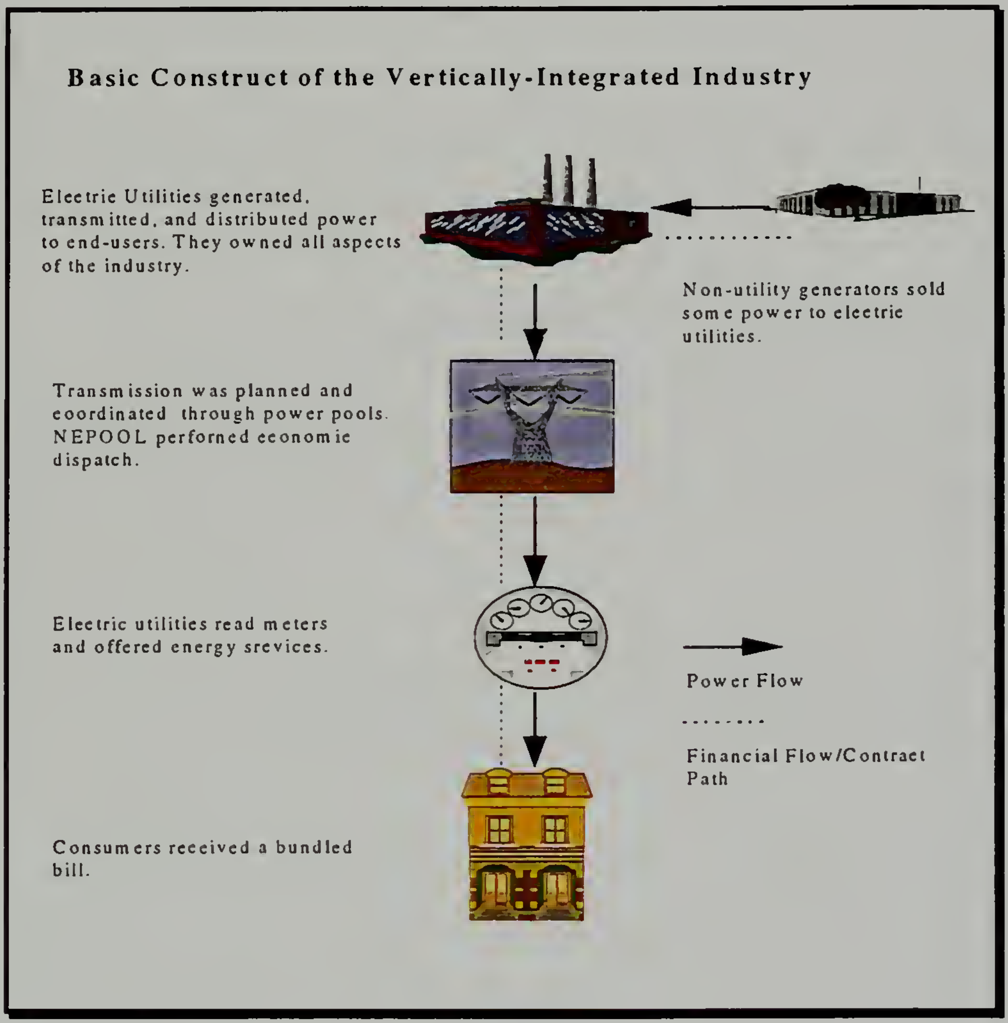
[45] David Nevius, Vice President, NERC, Presentation Before the Electricity Committee, National Association of Regulatory Commissioners (NARUC) Winter Committee Meetings, Washington, DC, February 25, 1997

[46] NEPOOL's agreement is authorized in Mass. G.L. c. 164A

The term, *wholesale market* refers to power supply traded between electric utilities, cooperatives, municipal electric systems and Federal and state agencies for resale to ultimate consumers. Despite the passage of PURPA, competition in the wholesale markets remained restricted until the passage of EPAct. While PURPA encouraged the development of non-utility generating companies, they had no access to retail customers and their participation in wholesale markets was limited. Provisions in PUHCA prohibited interstate ownership and transmission access was restricted to capacity that transmission owning entities (usually vertically integrated companies) made available. Furthermore non-utility generators were excluded from most pool arrangements and were not members of NERC.[48]


Basic Construct of the Vertically-Integrated Industry
Electric Utilities generated, transmitted, and distributed power to end-users. They owned all aspects of the industry.
Non-utility generators sold some power to electric utilities.
Transmission was planned and coordinated through power pools. NEPOOL perforned economic dispatch.
Electric utilities read meters and offered energy srevices.
Power Flow
Financial Flow/Contract Path
Consumers received a bundled bill.

EPAct removed the PUHCA restrictions and mandated that transmission owning entities open up their lines to other users. Local distribution companies can now obtain power through the wholesale market, from a number of generators, rather than only from its parent company. In a market where the introduction of competition is limited to wholesale transactions the retail customer notice know change. Under this model, transmission and distribution systems would remain regulated monopolies. In addition, companies could remain vertically integrated but they have to ensure open access on their transmission

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[48] Recognizing the changes taking place in the industry, NERC recommended to its member systems that their membership should be expanded to non-utility generators in 1992.

In order to ensure a competitive wholesale market, Congress, in EPAct, required that FERC open the national electricity transmission system to wholesale suppliers.[49] In compliance with this mandate, FERC, in Order 888, told public utilities to open their transmission systems to competitors in a fair, non-discriminatory manner. To meet this requirement transmission owning companies and power pools were required to file transmission tariffs with the FERC by the end of 1996.[50] The Order prompted a number of organizations and other interested parties to design proposals for implementing an open access system.

While some participants believed that a competitive market was achievable through existing structures, many others felt that the traditional system would not allow a fair and robust market to develop. Indeed, the close cooperation of electric utilities has had many benefits, such as economic efficiency and reliability. However, in their traditional form, these cooperative relationships presented several problems in a competive market:[51]

- Pool systems have traditionally provided preferential treatment to their members in the form of discounted transmission services.[52] These practices conflict with FERC's principle of non-discrimination.
- Coordination of the system for economic efficiency creates certain cost savings. The savings from these costs were passed on to members through administrative rules, and therefore did not necessarily reflect rates which would be charged outside the pool. As a result members were increasingly entering into economy transactions outside the pool, where power can be purchased at competitive market prices.
- There was some concern that non-utility generators were, in certain circumstances, benefiting from the services provided by pools without having to pay for them.

In order to eliminate these deficiencies, less restrictive, more transparent structures have been proposed. Because of electricity's unique physical characteristics, it is well recognized the wholesale spot market for electricity will require some level of coordination. A number of utilities and power pools have

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[49] P.L. 102-486, § 721, 16 U.S.C. 824j

[50] Under FERC's Order 888 transmission tariffs are based on two components, network charges and availability transmission capacity (ATC). These requirement were based on the contract path approach to identifying transmission. That is assuming that electricity flows in the same path which its financial contracts are signed for. FERC attached an appendix to the Rule which introduced the idea of capacity reservation tariffs (CRT) to replace he network and ATC approach. To date, the FERC has not yet made a determination. See, *Notice of Proposed Rulemaking, Capacity Reservation Open Access Tariffs*, 61 Fed. Reg. 21,847 (1996)

[51] Summary from Paul A.Centolella, "The Organization of Competitive Power Markets and Spot Pool Prices," The Electric Industry Restructuring Series, the National Council on Competition and the Electric Industry, (October 1996) p.16-17

[52] Discounts were given on ancillary services which include, but are not limited to, reactive power supply and voltage support, short-term balancing, and operating -spinning reserve.

suggested that a separate transmission system coordinator be created. This coordinator would be independent of utility operations - hence the term "independent system operator" or "ISO." The ISO would manage the transmission network in such a way as to ensure open access to all electricity buyers and sellers, and to ensure system-wide reliability is maintained. It would administer the application of the wholesale transmission tariffs (transmission owning utilities have filed these with FERC) and an electronic information system which provides market participants with real-time information about the network.[53] It is likely that transmission owners would relinquish control, but not ownership, of their transmission assets to the ISO. The ISO would probably oversee, not necessarily perform, maintenance on the system. [54]

Most competitive markets, especially those that were formally regulated, need a framework in which the market participants can conduct business. Potential market models range from little or no coordination, where trades are done independently and prices kept confidential, to models where all trades are performed through an intermediary and there is an system -wide market price. In general, the structures proposed fall under one of the following three types:

- Bilateral markets - In this model, there is no central dispatch function. Instead, most electricity transactions take place under specific supply contracts between suppliers and distributors, marketers, aggregators or final customers. Contracting entities would need to let the transmission system operator what they plan to do. The transmission system operator would maintain system integrity by providing system information and asking contractors to cancel their scheduled dispatch when necessary. This approach would be difficult to implement in areas where there is a great deal of congestion on the system, because individual contracts are likely to effect the ability of other market participants to use the system (remember the transmission system can only handle certain amounts of power without effecting another member's ability to deliver).

- ISO and separate Power Exchange (PX) - In this model, there are two separate autonomous entities.. The spot market for electricity would take place in the PX. Bids (for hourly or half-hourly time purchases) would be placed into the market no more than a day in advance. The PX would provide a dispatch schedule, including information on the prices at which generation could be adjusted to meet the requirements of the transmission system, to the ISO on a day-ahead basis. The ISO would manage use of the transmission system by adjusting, within the limits described by the PX, the dispatch schedule.

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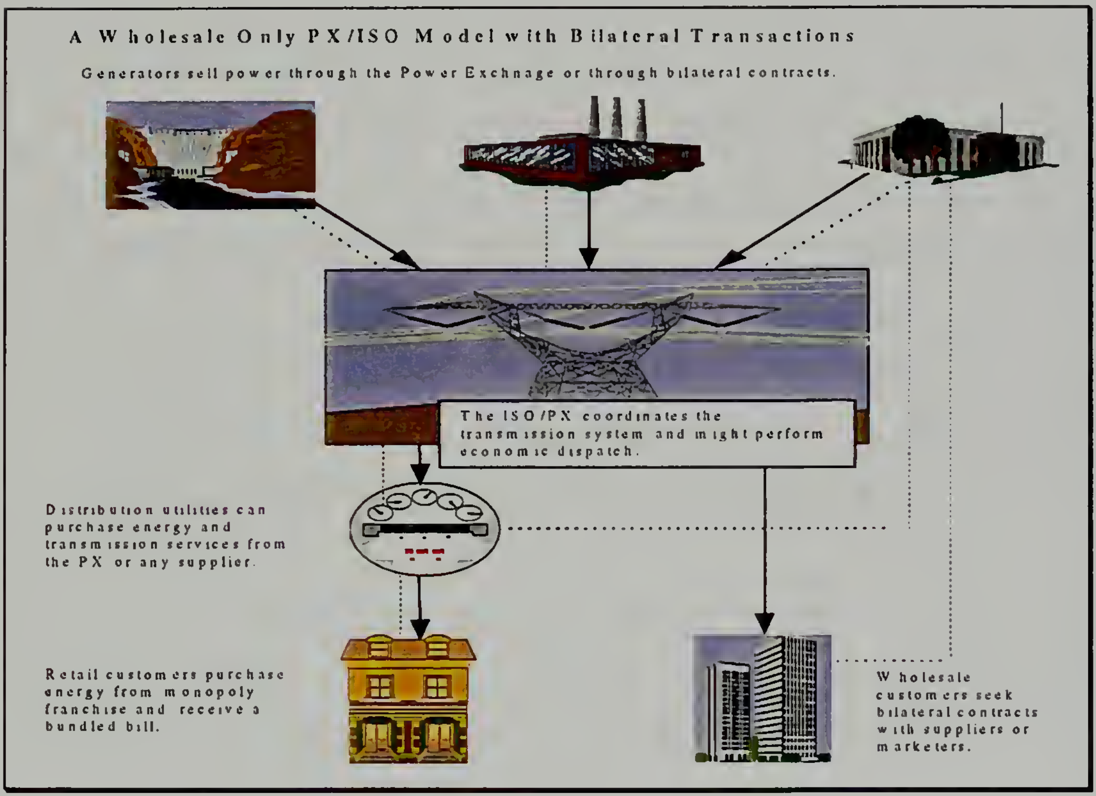
[53] In conjunction with Order 888, FERC issued Order 889 which requires transmission owning utilities to established an open access information system (OASIS) which provides real-time information on available transmission capacity. 61 Fed. Reg. 21,737 (1996)

[54] FERC has supported, but not required, the creation of ISOs. In Order 888, it outlined eleven principles ISO proposals should comply with. 61 Fed. Reg. 21,594-21,596 (1996)

use of the transmission system by adjusting, within the limits described by the PX, the dispatch schedule.

- POOLCo and Expanded ISO- integrates the function of the spot price pool with the operation of the transmission system. Generation unit commitment and dispatch within the pool would be implemented on a least-price basis, consistent with the development of a competitive market. An "expanded ISO", where the ISO and the PX are fully intregrated are a derivate of the POOLCo model. Proponents of this model contend that the function of the transmission operations and the spot market cannot be separated because of congestion on the transmission system. Because of these constraints, the transmission system could not be balanced without real-time knowledge about what transactions are taking place and without control over delivery schedules.


A Wholesale Only PX/ISO Model with Bilateral Transactions
Generators sell power through the Power Exchnage or through bilateral contracts.
The ISO/PX coordinates the transmission system and might perform economic dispatch.
Distribution utilities can purchase energy and transmission services from the PX or any supplier.
Retail customers purchase energy from monopoly franchise and receive a bundled bill.
Wholesale customers seek bilateral contracts with suppliers or marketers.

Restructuring developments in areas where congestion is more prevalent, such as New England, indicate that a cobination of the above models is a likely outcome. For example, the Vermont Public Service Board has supported the creation of a New England ISO and a PX to work with the ISO (further details of the relationship between the two are yet to be defined), while also allowing for bilateral transactions to take place.[55]

NEPOOL Proposal

FERC's request that existing power pool arrangements conform to the principles of a competitive market, power pools have initiated reforms which transform their structures. Over the past three years, the

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[54] FERC has supported, but not required, the creation of ISOs. In Order 888, it outlined eleven principles ISO proposals should comply with. 61 Fed. Reg. 21,594-21,596 (1996)

[55] Vermont Public Service Board, Investigation into the Restructuring of the Electric Utility Industry in Vermont, Docket No. 5854, *The Power to Choose: A Plan To Provide Customer Choice of Electricity Suppliers*, December 30, 1996 p. 124

to be part of the NEPOOL central dispatch. [56] A subsequent amendment allocated equal rights and responsibilities to these entities. [57] Since that time NEPOOL members (and state regulators) negotiated other changes to the NEPOOL structure. These include changes to the governance, management, and operational structures which incorporate the competitive market structure. NEPOOL filed its restructuring arrangements with FERC on December, 1996.[58] If approved, the arrangement would create an ISO to operate the transmission system and the power exchange and perform central dispatch. NEPOOL would become an oversight board which would establish ISO standards and rules of operation and would contract with the ISO to perform the function as previously carried out by NEPOOL.

Major elements of NEPOOL's proposal include:

- The provision of new regional transmission arrangements.
- The creation of an ISO, with representation on NEPOOL committees, to assume responsibility for the operation of the NEPOOL Control Are and control center and the administration of regional open access transmission tariff and NEPOOL interchange and market settlement system.
- The revision of NEPOOL governance arrangements to assure meaningful participation by every (NEPOOL) Participant in voting and representation of NEPOOL committees.
- The institution of new market arrangements and products based on a competitive bid system for NEPOOL Interchange Transactions (transactions with other electric power systems) and for Installed Capability Responsibilities (capacity held in reserve in case its needed to support the system) in order to assure reliable bulk power service for New England.[59]

In its current form, the NEPOOL restructuring proposal is incomplete because they do not include the necessary artilces of incorporation. The participants anticipate filing a completed proposal in early 1996. Implementation of the arrangements are subject to FERC approval.

Each of the market models described above aims at creating a robust competitive energy market. However, this does not imply that regulation should be done away with. Because the transmission system will remain a monopoly service, FERC will have ongoing oversight of the transmission system, ensuring all participants are treated in a non-discriminatory manner. Neither FERC or state commissions have advocated divestiture, which creates other concerns which should not be overlooked. First, self-dealing between generation and distribution companies could be a potential problem. Second, some generation

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[56] Thirty-Second NEPOOL Amendment

[57] Thirty-Third NEPOOL Amendment. Prior to this amendment these entity could participate in only limited activities of the Pool and had limited voting rights because they did not directly serve customers. Many of NEPOOL's provisions define member rights an obligations in terms of a responsibility for customer retail load. This Amendment eliminated that requirement for many of the provisions.

[58] New England Power Pool, "Restructured Arrangements (including the Open Access Transmission Tariff) Volume 1," filed with FERC on December 31, 1997

companies may have strategically located facilities (in load pockets) which they can use to affect market prices. These problems are recognizable and can be addressed with appropriate regulatory mechanisms. Because the activities of electric utilities were traditionally regulated by FERC and state commissions, they were generally exempt from federal and state antitrust laws.[60] In the absence of rate regulation oversight over certain competitive functions, electric utilities would be subject to antitrust laws.

Options for the Legislature to Consider

As is indicated in the discussion above, the state has limited jurisdiction over transmission and many of the rules concerning operation of the networks will be determined at the federal level. However, state policy makers can establish the framework for competitive market operations. Indeed, the state regulatory commissions from all the New England states contributed to the development of the NEPOOL proposal. Furthermore, the creation of a competitive market does not eliminate the need for regulation - there are some areas of concern which the legislature might address or authorize to the DPU to address.

Actions the legislature might consider are:

- Establishment of an impartial ISO oversight commission. The purpose of the commission would be to oversee the Board of Directors or similar governing body of the Independent System operator or its derivations. Because the electricity market is likely to be a regional market, under a regional ISO, the Commission may be created in conjunction with other states in the region through a state agreement such as an interstate compact. Appointments could be made by the Governor with legislative approval required, or in some other manner.[61]
- Study the effects of a renewable portfolio requirement on ISO operations. This would work by favoring the bids placed in through financial credits from suppliers who use renewable generators. When ISO made determinations for economic dispatch renewable generators would be favored through financial credits.
- Consider alterations in the Energy Facilitates Siting Board statute to formally recognize the existence of an ISO, and seek ISO input when construction of transmission and generation facilities is under consideration.[62] In particular, the ISO would contribute an opinion to any impact studies which may be filed in accordance with state siting law.

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[59] New England Power Pool, " Restructured Arrangements" p.7

[60] The antitrust rules include the Sherman Act, 15 U.S. C. §§ 1-7, The Clayton Act, 15 U.S.C. 112-27, and the Massachusetts Antitrust Act, G.L. c.93 §§ 1-14A

[61] A government ISO commission was created in the California legislation - Assembly Bill 1890.

[62] Mass. G.L. c. 164 § 69

- Promote regional cooperation through the ISO oversight commission, DPU and New England Governor's Conference or another appropriate regional body.
- Amend the General Laws to reflect the changes made in the NEPOOL Agreement. Any such action would have to reflect decisions made by the FERC and should be done in cooperation with the DPU
- Ensure the DPU has adequate funding and staff to review problems which may arise from horizontal market power and company self-dealing.
- Require the ISO to publish the half-hourly pool price in the state's major newspapers and on the Internet.
- Protect against potential horizontal market power abuses by divestiture of a certain percentage of a company's generation assets.

Retail Markets

Unlike the future of wholesale power markets, which are well on their way to unbundling and full competition, the future of retail markets is uncertain. Some state regulators and other industry participants believe that retail competition should not be introduced until the effects of wholesale competition on the industry are known. The degree of possible unbundling of retail services is in also in dispute. However, in order for customers of all sizes to fully enjoy the benefits of wholesale competition, unbundled retail competition may be necessary. Retail markets structures will affect how large or how small the benefits and risks customers will receive from competition. The legislature will have to find a proper balance between consumer protection and pro-competitive interests.

Existing Retail Structure

Today, retail markets are not open to competition. Customers are served by distribution companies who have monopoly franchise service territories and are generally not subject to state or federal antitrust guidelines.[63] The distribution company may be part of a municipal system (which self-generates or purchases power in the wholesale market) or it is part of a investor-owned, vertically-integrated system. In either case, the customer receives a bundled service consisting of energy and distribution services. All the charges associated with the production and delivery of that power are incorporated in a per kilowatt hour rate which is regulated by a state commission. In the case of municipal systems, the local government determines the rate to be charged.[64] Rate regulation in Massachusetts has been based on a utility's cost-of-service. In general, the vertically integrated system provided retail customers with a reliable source of energy and service.

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[63] The antitrust rules include the Sherman Act, 15 U.S. C. §§ 1-7, the Clayton Act, 15 U.S.C. 112-27, and the Massachusetts Antitrust Act, G.L. c.93 §§ 1-14A

As they currently exist, distribution companies perform a number of functions. They deliver power (wires function), offer demand side management and other energy service programs, provide billing services for all aspects of energy delivery, install and read meters, and ensure universal service. At this time, high investment costs and environmental concerns render the establishment of competing distribution systems inefficient and impractical. In a competitive retail market the wires function is likely, at least in the near term, to remain a regulated monopoly. The remaining functions performed by the distribution companies, those without cost prohibitionscould be unbundled from the wires function.

Pressure to alter the existing retail structure comes from a number of different sources. As discussed in Section II, price differentials across the country are a contributing factor. It is anticipated that forcing suppliers to compete for load and eliminating cost-of-service regulation will make providers more efficient, resulting in lower prices. Likewise, a number of observers believe that the cost-of-service regulatory system is no longer the best way to serve consumers. The adoption of customer choice may be a better provider. Finally, non-utility suppliers and energy service companies would like to have access to end-users. In order to achieve these efficiencies, new market models must be considered.

Competitive Market Models - Retail Structures

A competitive retail market would embody all the components of a competitive wholesale markets. In simple terms, the competitive retail market can be seen as an expansion of the wholesale market. Generating companies would now be able to contract directly with customers, instead of through a distributor. Suppliers and customers or their intermediaries, would arrange for transmission services. Transmission would remain a regulated monopoly, operated in the same manner as it would be in a competitive wholesale market. The delivery of power at the distribution level would still be handled by a local distributor. It is likely that the transportation of energy to the final consumer at this level would continue to be a regulated monopoly service. In the absence of divestiture, the operation of the distribution system must be separated from that of the generation function. Wholesale energy sales between generators and distribution companies would continue to be regulated by FERC. The costs of generation, transmission, and distribution would be unbundled on customer bills.

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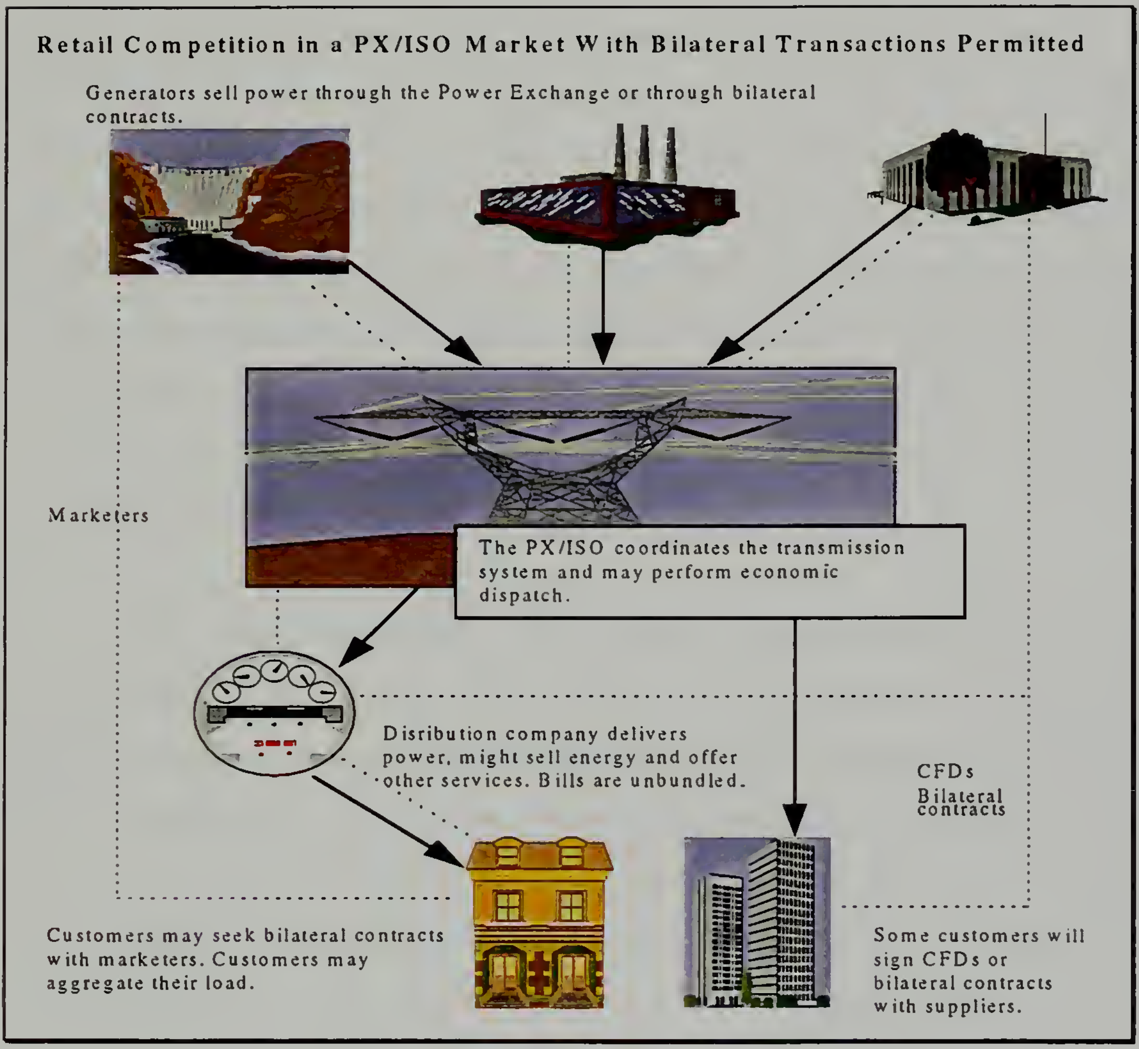
[64] Fuel charges are separate line items on electric utility bills in Massachusetts.

In a bilateral market structure, customers, or their intermediaries, and suppliers would sign contracts for power to be delivered at a specified time. Information on the physical aspects of the transaction is provided in advance of the trade to the system operator. The arrangements between suppliers and customers would differ in the spot price pool and ISO/PX markets. Customers (including end-users, marketers, distribution company buying power or other intermediary) and suppliers sign financial agreements for the delivery of power at specific times. Because prices can vary, depending on demand, some parties on both the supply and demand side, will contract for power at fixed prices in order to avoid the risk associated with volatility. Other suppliers and customers might use contracts for differences (CFDs) to hedge their risks.[65] A CFD is similar a future contract used in other commodities - commodities are bought and sold via contracts that specify a delivery date and fix a price. If on the delivery date the spot price is higher than the contract price, buyers would compensate sellers, if the price were lower, sellers would compensate buyers.[66]


Retail Competition in a PX/ISO Market With Bilateral Transactions Permitted
Generators sell power through the Power Exchange or through bilateral contracts.
Marketers
The PX/ISO coordinates the transmission system and may perform economic dispatch.
Disribution company delivers power, might sell energy and offer other services. Bills are unbundled.
CFDs
Bilateral contracts
Customers may seek bilateral contracts with marketers. Customers may aggregate their load.
Some customers will sign CFDs or bilateral contracts with suppliers.

Unbundled Distribution[67]

Some market participants advocate a separation of all or some of wires services currently provided by the distribution company. In general, three arguments are given in support of limiting the role

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[65] See Sally Hunt and Graham Shuttleworth, *Competition and Choice in Electricity*, (Wiley and Sons, New York: 1996) p. 83 and 87

[66] The New York Mercantile Exchange (NYMEX) has designed and implemented futures contracts for electricity spot markets currently operating in Palo Verde, California and on the California - Oregon Border (referred to as the COB).

distribution company. First, it is a matter of principle - with the exception of generation and transmission, customers should be given the full opportunity to choose suppliers of all services. Second, unbundling would provide a check on the market power of distribution companies and remove potential for antitrust violations. In a competitive market, distribution companies will be in direct competition with energy service providers to supply services including demand side management or other value added services (for example, telecommunications service or home security systems). Because distribution companies have access to market information and a long history with customers, other suppliers of these services believe they will not be able to successfully compete with distribution companies. Unless new rules prohibit them from doing so, distribution companies will also be able to provide energy to end-users customers. This puts them in direct competition with load aggregators, marketers, and retailers. Although they might not generate it themselves, or purchase it from a parent company, again they would have access to valuable information, which gives them a competitive advantage.

The final claim centers around the idea that the administrative services performed by distribution companies can be more efficiently performed by other companies. In the case of energy supply, allowing other suppliers to compete for customer which rely on the distribution for energy (those not exercising the right to choose or low income tariff customers) would give those customers benefits from the market they may not experience otherwise. All administrative functions (metering, billing, and revenue collection) are considered to present opportunities for competition, however, much of the debate is focused on the installation and reading of meters. In a competitive market, where customers contract with various suppliers and the retail price of energy fluctuates, the meters serve a critical function. Although not essential to a competitive retail market, real-time electricity meters can greatly enhance the market by allowing customers to directly track their demand and usage. Many large industrial customers have already installed real time meters to help them manage their loads. It also permits more accurate billing.[68] Advocates for unbundling distribution argue that allowing only the incumbent distribution companies to install real-time meters will create uniformity and impede lack of development of advanced metering, communications, and related technologies.[69] Furthermore, system-wide metering by the distribution company creates a barrier to new market entrants.

Some distribution companies have developed a number of counterarguments to these propositions. First, they contend that even if the distribution company offers energy services and energy, other suppliers

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[68] Without real-time meters suppliers have to estimate demand usage using average load demand curvesThis lumps like customer together to derive individual usage.

[69] “Metering varies three significant economies of scope and scale: size, functionality and technology. A firm that buys a million meters obtains a lower price than one purchasing 100,00.A meter reader reading 500 meters in a consecutive path reads ten times the number of meters per day as one who reads every 20th meter. ...Meters have multifunctional purposes, for billing purposes, but also for connection/disconnection, distribution planning, and demand side management on behalf of the customer. Finally, a meter can be used to simply record consumption, or as an element of a multifunctional system that supports some or all of the functions listed

will still be able to compete for customers. Two, billing functions must be left for the distribution company because it is the distribution company who is taking the credit risk of serving the customer. Three, there just isn't enough money to be made from meter installation, meter reading, and billing for a full market to develop. Fourth, any installed meters, whether they be the distribution companies or another server, would have to meet certain standards. Developing open architecture standard requirements would delay the introduction of real-time metering. Five, the distribution company should initially install real-time meters because using a network system approach, rather than an individual customer and individual supplier approach, maximizes on the economies of scale. If real-time meters are not installed on a system-wide basis, fewer customers or only certain groups of customers will receive them.[70] Finally, at least initially, the system needs to be kept simple for customers.

Options for the Legislature to Consider

- Mandate that the introduction of retail competition take place for all customers simultaneously, on a system-by-system basis, or through a phase-in process.
- Remove regulatory and statutory barriers to retail competition, including franchise guarantees provided to incumbent utilities.
- Protect customers' rights through provisions described in Section VII.
- Determine what services the distribution company can offer (energy delivery/wires, administrative functions, and/or value-added services).
- Set the responsibilities and roles for different service providers: authorize the creation, certification, and supervision of various types of electric companies.
- Enourage existing, integrated utilities to divest from their generation, transmission or distribution assets or to create corporate subsidiaries for each of these functions. Compliance with the Public Utility Holding Company Act and regulations of the Securities and Exchange Commission would be necessary.
- Alternatively, require integrated utilities to separate into affiliates, within one integrated company, along these functional lines with corporate rules of conduct. These might include the creation of a fire wall (eliminates cross-subsidization and limits the financial liability between companies) and a Chinese wall (places restrictions on the information which affiliates can share with each other) between a distribution company and its affiliates.
- Ensure all electric companies abide by existing antitrust laws and establish rules of conduct for information sharing. For example, if the distribution company shares information with an affiliated supply, it might be required to share the same information with other suppliers.

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above. The savings associated with the multifunctional system far exceed those from a single-purpose technology." Chris S. King, "Competition at the Meter: Lessons from the U.K.," *Public Utilities Fortnightly*, November 1, 1996, p.23.

- If generation and distribution companies are to remain in the same corporate structure, require the generation company create a separate marketing affiliate to sell energy. The affiliated distribution company would have to purchase power through the marketing affiliate.
- If a determination is made to unbundle distribution services, encourage the DPU to adopt standard interfaces and open system architecture requirements for meters or other essential devices to ensure that technology is interchangeable and competitors have equal access to customer information.

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[70] Chris S. King, "Competition at the Meter: Lessons from the U.K."

VII. Stranded Costs[71]

The stranded costs issue has dominated the restructuring debate since the passage of the EPAct. At first, it appeared that the stranded cost question would stall efforts to move toward competition in the electricity industry indefinitely. Although far from being resolved, the debate has progressed beyond an argument over assessment methodologies and estimates to consideration of proposed solutions. Nevertheless, it is clear that any resolution of the stranded cost issue will require close cooperation of policy-makers, regulators, consumer advocates, and market participants. This process was crucial in three of the four states that have adopted retail competition laws. It is likely to play the same role in the Massachusetts legislature.

Stranded Costs Defined

Technological developments, regulatory change, and product and market transformation can render a company's equipment and employee skills obsolete. When this occurs, the asset's book value becomes greater than its market value. The money invested in these assets cannot be recovered and is deemed "stranded." Nearly all companies are likely to experience the stranded cost phenomenon at some time. An example can be found in any business that uses computers: innovations in computer technology often render a company's computer equipment obsolete and unsaleable. Typically, companies manage stranded costs by selling off equipment, closing factories and retraining or laying off employees. In addition, they may write-off remaining losses on their corporate income tax.

The introduction of competition in the electricity industry will drastically effect the market value of many utilities' equipment, facilities, power purchase agreements and employees. In a competitive environment, customers may seek new, lower cost energy providers and companies may seek new customers, but they may not have a competitive price because their fixed costs are higher than those of other suppliers. If this is the case, assets of the incumbent utilities would become uneconomic. Of course, some companies are well posed for competition and may actually experience a rise in the market value of their assets. Others, particularly those owning older, less efficient generation, high cost nuclear power facilities and uneconomic power purchase agreements, expect to experience losses in the billions. Employees of this facilities will also be affected. For example, in Massachusetts some of the electricians employed at generation facilities are certified by their employer, rather than the Union, to work only at facilities owned by that particular utility. If ownership of the unit is transferred, there is a concern that the existing

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[71] Other terms are often used in place of this strandable investments, stranded investments, stranded assets, stranded commitments, or transition costs. Energy Information Administration, *Changing Structure of the Electric Power Industry: An Update*, DOE/EIA-0562 (96), 1996, p.77

regulations will prohibit them from working under new a owner. Potential stranded costs for electric utilities fall under the following broad categories:

- Purchase power agreements (PPA) - These are contracts between a vertically-integrated utility and other generators including other electric utilities, independent power producers, non-utility generators (cogenerators) and small power producers. Some of these contracts were signed under PURPA regulations. [72] There are two types 1) wholesale agreements between electric companies and qualifying facilities (QFs): and 2) wholesale agreements between electric companies and other non-utility generators (NUGs) or other electric utilities. In Massachusetts, PPA contracts have been subject to a prudence review and/or general contract approval by the DPU.[73]

- Generation assets - These are facilities, owned in whole or in part, by any generator of electricity.[74] All generation facilities built in Massachusetts are required to receive approval from the Energy Facilities Siting Board/DPU.[75]

- Regulatory assets - Some observers call all stranded costs regulatory assets. More specifically, regulatory assets can range from costs associated with conservation and load management programs to those of employee retraining. The term is also used in reference to stranded costs associated with accounting mechanisms of the regulatory system.[76] They include: 1) deferred tax credits; 2) DSM and Account for Correcting for Efficiency amounts capitalized, not yet collected; 3) vested post-retirement employee benefits; and 4)nuclear decommissioning costs.[77]

Magnitude of Stranded Costs

Estimates of stranded costs for the whole country range from 10 to 500 billion dollars for the country as a whole. The wide range of values is attributable to the difference in assumptions and methodologies used. For example, in comments filed to the Massachusetts DPU in early 1996, utilities requested stranded investment charges that would fully recover their net investment in the plants as they

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[72] For a descirption of PURPA and its application in Massachusetts see Section II.

[73] M.G.L. c. 164 §§94, 94A. See Massachusetts Department of Public Utilities, DPU-96-100, *Model Rules and Legislative Proposal*, December 30, 1996, p. 273-283 for the DPU's determination of authority over PPAs.

[74] Because transmission and generation are likely to remain regulated monopolies, their owners are likely to continue to receive an adequate return on these investments. Therefor, they are generally not characterized as being "stranded" at this time.

[75] M.G. L.c 164 § 69K

[76] Vermont Public Service Board, *Investigation into the Restrucutring of the Electric Utility Industry in Vermont*,p. 55

[77] Under existing NRC regulations, electric utilities are required to contribute to the expected decommissioning costs of any nuclear facility they own either in whole or in part. These funds are collected through the rates and placed into a trust (Nuclear Decommissioning Trust). In Massachusetts, the DPU oversee the use of funds from the trust. Utilities must complete an annual self assessment of these funds which is provided to the NRC upon request.

assumed their plants would have zero market value. However, a study by Resource Insight Incorporated for the Attorney General found that utilities are likely to realize net gains under restructuring, based on the assumption that the market valuation of most utilities' generation assets will exceed their net investments.[78] While little consensus exists on stranded cost estimates, recent studies provide a range of costs that might be expected. Moody's Investors Service estimates the range for the country to be from 50 billion to 300 billion dollars.[79] A recent analysis by DRI/Mc Graw Hill findsthe national total to be 87 billion dollars. The table below is an extract from the study which shows the regional distributions of stranded costs. It lists the New England region as having the third highest present value of stranded costs.

Table Four. Regional Distribution by Census Division, 1995

	Stranded Costs (Billion Dollars)	Present Value of Stranded Costs (Billion Dollars)	Present Value As Share of Current Rate Base (Percent)
New England	16.6	12.7	59
Middle Atlantic	21.5	16.5	24
South Atlantic	12.2	9.3	13
East North Central	0.0	0.0	0
West North Central	2.7	2.0	
East South Central	7.5	5.8	35
West South Central	0.0	0.0	0
Mountain 1	0.0	0.0	0
Mountain 2	34.0	2.6	18
Pacific 1	0.0	0.0	0
Pacific 2	24.0	18.4	54
U.S. Total	87.8	67.3	17

Stranded costs by region are estimated by DRI based on the difference between the region's average industrial electricity price and the cost of new generation. This approach misses stranded costs associated with high-cost generating plants in regions dominated by low-cost generating plants, such as East North Central, West South Central, Mountain 1, and Pacific 1. While stranded costs may not be zero in these regions , they are expected to be significantly lower than in the coastal regions.

Source: DRI/MCGraw Hill, World Energy Service - U.S. Outlook Fall/Winter 1996 (Lexington, MA, 1996), p.44

Similarly, Moody's Investors Service's most recent estimates rank four Massachusetts' companies in the top twenty-five (of eighty-five) with highest stranded costs as a percentage of equity.

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[78] Resource Insight Incorporated, "Estimation of Market Value, Stranded Investment and Restructuring Gains ," April 7, 1996. p.2 The study did not examine the stranded costs associated with purchase power agreements or regulatory assets.

[79] *Electric Utility Week*, "New Moody's Survey Shows Many Changes in Estimated Stranded Costs and Prices," January 27, 1997, p. 11-13.

Table Five. Moody's Stranded Cost Reports 1996[80]

Company[81]	Break-even price ($/mWh)	Stranded Costs ($million)	S.C. as % of equity
Montuap Electric	143.43	753	407.9
New England Power (NEES)	99.85	1,945	218.7
Boston Edison	136.74	2,083	210.5
Western Mass. Elec. Co.(NU)	122.90	517	176.9

Moody's calculated stranded costs by comparing company break-even prices with estimated regional market prices for capacity assuming competition. For this report, Moody's used NERC regions - Massachusetts is part of Northeast Power Coordinating Council. Estimated stranded costs for the NPCC total $33 billion and capacity costs are estimated to be $45/kWh.. For a description of NERC regions see Section VI.

The prospect of these losses are daunting to many utility executives and their shareholders as well as existing and potential creditors. Indeed, the investment community has reacted to the prospects of these losses and the introduction of competition in general, with a downgrading of certain utility bonds. Credit ratings, for lending to certain utilities, particularly those perceived to have high stranded costs, have fallen over the past two years.[82]

It should be noted that investor-owned utilities are not the only entities affected by stranded cost associated with competition. Under wholesale competition, some independent suppliers may find it necessary to renegotiate of contracts at prices which render their facilities uneconomic. Similarly, if engaged in retail competition, municipal light companies may find customers choosing an alternative provider because their rates are uncompetitive. This could make the community's generation facility or purchase power agreement a stranded asset.

Stranded Cost Recovery- Who Should Pay?

Responses to this question differ greatly across interest groups. Some observers argue that utilities should receive no stranded cost assistance from rate payers or tax payers. They maintain that under cost-based regulation utilities had access to lower cost financing and their shareholders enjoyed steady returns on their investments for years. Thus, if utilities made poor investments, it is they who should pay for them, not the rate payers. In addition, it is the customers, not investors who have carried the risks of these investments

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[80] *Electric Utility Week*, New Moody's Survey Shows Many Changes in Estimated Stranded Costs and Prices, (January 27, 1997) p. 11-13.

[81] Moody's does not provide a rating for every company. It should be noted that at the Joint Committee on Electric Utility Restructurig December 3-5 hearings on stranded costs, Commonwealth Electric estimated that it had $3.4 billion in stranded costs.

[82] See Fitch Investor's Service, *Uility Series*, June 6, 1996

through cost-of-service rates. On the other hand, utilities contend that many of these investments were made under the "regulatory compact," entitling them to a return on these assets. The term regulatory compact refers to the unique relationship between utilities, their shareholders, regulators and rate payers. which has characterized the industry for decades. Under a tacit agreement, utility shareholders invested in power purchase contracts, generation, transmission and distribution in order to provide the public with electricity.[83] In return, the regulators guaranteed utilities adequate recovery and a reasonable rate of return on their investment. Utilities have argued that this relationship represents a legal contract between regulators and utilities, and that not to allow return on investment already made would be a breach of this contract. While many observers recognize the existence of the regulatory compact, there is less consensus this represents a legal entitlement to a return.[84]

To date, actions taken by policy-makers indicate a compromise of the two positions. Policy-makers recognize that decisions made under the cost-of-service regime may have contributed to the stranded cost dilemma. In addition, they realize that such large scale losses would have a tremendous effect on tax revenue, the financial marketplace, and the work-force. Because utilities are an integral part of any economy, these outcomes would affect not only the shareholders, but rate payers and taxpayers. Finally, many observers fear litigation would ensue if stranded cost recovery were not allowed. Consequently, most mitigation strategies incorporate a sharing mechanism or attempt to shift stranded costs among differing segments of the economy. It should also be noted that not all the mitigation strategies that have been discussed or recommended in the past are based on equity or fairness when it has come to deciding who should bear the burden of stranded costs. The basic intent is to lower or reduce the level of stranded costs that utilities may otherwise be required to absorb.[85] In other words, in some cases utilities may end-up paying a majority or the stranded costs, in others, the taxpayer. The distribution among payees depends on the mitigation strategy pursued.

Stranded Costs Associated with Wholesale and Retail Competition

In Order 888, FERC determined that it had jurisdiction, under the Federal Power Act, to authorize the recovery of stranded costs associated with the introduction of wholesale competition.[86] In addition, FERC determined that in cases where a former retail customer turns wholesale in order to obtain direct transmission access (retail-turned-wholesale customers), FERC should be the primary forum for addressing

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[83] Electric utilities in Massachusetts were also required the administration of programs related energy efficiency and the purchase of power from IPPs and NUGs at avoided costs.

[84] For a review of the legal arguments associated with the utilities' right to stranded cost reovery see, DPU 96-100 Model Rules and Legislative Proposal, pg.234-264, and Vermont Public Service Board, *Investigation into the Restrucutring of the Electric Utility Industry in Vermont*, p.51-73. The Massacshusetts DPU determined that stranded cost recovery was not guaranteed by law. The Vermont PSB concluded that the law supported partial recovery.

[85] EIA, *The Changing Structure of the Electric Power Industry*, p.82

the recovery of stranded costs - this includes cases of municipalization.[87] FERC will grant cost recovery for "a legitimate, prudent, and verifiable cost incurred by a utility to provide service to a wholesale requirements customer, a retail customer, or a newly created wholesale power sales customer that subsequently becomes, in whole or in part, an unbundled wholesale transmission services customer of such a utility."[88]

FERC does not have jurisdiction over wholesale power supply contracts and transmission agreements of non-jurisdictional (including municipal) systems. Therefore, recovery of stranded costs in instances where customers leave these systems was not included in Order 888. Recovery of stranded costs in this case is subject to the terms of the contract or applicable federal and state law. However, non-jurisdictional utilities will be allowed to seek recovery of stranded costs when a customer leaves their system but continues to obtain transmission service under a FERC transmission rate authorized by petition.[89]

In accordance with the determination that states have authority to mandate retail competition, FERC also concluded that stranded costs recovery associated with retail wheeling should be handled by the states.[90] However, if states do not have the authority to address stranded costs or choose not to exercise it, than the utilities can go to FERC for a determination. This does not appear to be the case in Massachusetts. In the case of wholesale purchase power agreements which are made uneconomic by retail wheeling, the DPU has determined that utilities should be allowed to recover the stranded cost associated with PPAs through a charge on the distribution bill. However, neither the legislature nor the DPU are "absolutely prohibited from encouraging, through appropriately-designed incentive mechanisms, the modification or renegotiation of previously approved wholesale contracts."[91]

Stranded Costs Calculations For Recovery [92]

Incorporated in the notion that certain stranded costs should be shared is a requirement that the utility pursue mitigation strategies. Only after those options have been explored would the utility seek an

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[86] 61 Fed. Reg. 21,632

[87] 61 Fed. Reg. 21,640 (1996). FERC Commissioners Hoecker and Massey (two of five Commissioners) dissented from this decision.. 61 Fed Reg. 21,735 and 61 Fed. Reg. 21,736 (1996)

[88] 61 Fed. Reg. 21,630 (1996)

[89] 61 Fed. Reg. 21,646 (1996). FERC does not have the authority to mandate that non-juridictional utilities, such as municipal utilities, file open access tariffs. However, in order to encourahge "open" transmission systems , FERC utilized Section 211 of the Federal Power Act. Section 211 expressly authorizes FERC to order wholesale transmission access on a case-by-case basis, upon petition, of any transmitting utility.

[90] 61 Fed. Reg. 21,650 (1996)

[91] DPU 96-100 *Model Rules and Legislative Proposal*, p.280

[92] This section is a summary of Appendix E - Stranded Costs, EIA,*The Changing Strucutre of the Electric Power Industry: An Update*.

evaluation from the appropriate regulatory body and subsequent recovery. Stranded costs can be computed in one of two basic ways. A utility can compute the present value of its assets and compare the resulting valuation with its sunk or historical costs, or it can look at the loss in revenue (for a given number of years in the future) in determining a market price for electricity charges and compute the present value of stranded costs. The following is a list of variations which could be imposed, individually or in combination, on either mechanism.

- Bottom-Up Versus Top-Down: The bottom-up approach computes the amount of individual stranded assets. The top-down approach calculates the difference in revenues under a regulatory regime and those likely to accrue, assuming price will go down as a result of competition. The top-down method focuses on individual assets, and therefore may not be able to encompass those that are less tangible, but it allows for more targeted mitigation/recovery strategies.

- Ex Ante Versus Ex Post: Ex ante utilizes projections before the start of competition and relies on forecasts. It is based on embedded costs and projected market prices. The ex post approach does not begin until after competition has begun and uses known market prices. Obviously, there would be more accuracy in determining necessary cost recovery under the latter approach.[93]

- Administrative Versus Market Approach: The administrative approach is based on negotiation between the utility and regulatory agency (the case with utility-Attorney General Settlements filed at the Massachusetts DPU) or Legislative (as in the case of the Rhode Island legislation) decrees as to the appropriate recovery . The market approach simply puts assets up for sale (divestiture). There are two problems with the market approach: non-market assets would not fall under this approach and prices may be depressed due to over saturation of the market.

Alternative Ways to Compute Stranded Commitments

Source: Oak Ridge National Laboratory, Estimating Potential Stranded Commitments for U.S. Investor-Owned Electric Utilities,

	Administrative Valuation		Market Valuation	
	Ex ante	Ex post	Ex ante	Ex post
Bottom-up.......	Asset-by-asset value projections	Assets valued after restructuring	Asset sold at auction	After-the-fact purchase-price adjustment
Top-down .... valuation of	Projection of regulated rate by customer class	After -the-fact adjustment of regulated prices	Bundles of assets spun off	Deferred spunoff assets

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[93] An example of the problem with the ex ante approach can be found in the proposed sale of New England Electric System'sgenerating facilities. According to an article in the Wall Street Journal, " the plants...could attract bids even higher than the $1.1 billion at which they are valued on New England Electric's balance sheet." Ross Kerber,"Auction of18 Power Plants is Igniting Utilities'Interest," *Wall Street Journal*, February 6,1997.

ORNL/CO -406 (Oak Ridge, TN, January 1995) p.7[94]

Several regulatory agencies and legislatures have incorporated these methodologies in their stranded costs recovery strategies. Most of them have chosen a combination, or hybrid of the methods listed above. A description of the valuation methods and related cost recovery mechanisms from a few of these follows.

- *The Massachusetts DPU*

The DPU proposal is a combination of the administrative, ex ante bottom-up approach with an ex post adjustment. It does not mandate divestiture or contract renegotiation. Instead, it has proposed to calculate utilities' non-mitigable stranded costs on a net present value ("PV") basis. The PV would be equal to a company's embedded (historical) costs less estimates of cost recovered through mitigation (future costs). The DPU has defined embedded costs as:

> the cost of existing assets and obligations incurred by an Electric Company prior to August 16,1995, pursuant to the provision of electric service including (1) the amount of the book cost directly related to existing generating facilities that are wholly or partly owned by the company, (2) the minimum financial obligation under existing long-term power purchase contracts (3) the amount of the book costs associated with regulatory assets related to generation, and (4) the amount of costs that will be required to decommission nuclear facilities.[95]

Utilities would derive their estimated cost recovery from mitigation efforts with forecasts of market prices, generating unit costs and operation factors. Embedded costs and mitigation recovery estimates would then be combined to determine a company-wide PV. The PV would be combined with recovery periods, cost allocation and rate design to establish a (non-bypassable) stranded assets charge. No time limit is set on the period of stranded asset recovery, but stranded costs associated with the charge would be reviewed after two, five and ten years and adjusted accordingly.

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[94] As written in EIA, *The Changing Structure of the Elctric Power Industry*, p.145

[95] DPU 96-100 *Model Rules and Legislative Proposal*, p.290. Category (4), nuclear decommissioning costs, includes the future cost of decommissioning.

- *The FERC Approach*[96]

In Order 888, FERC announced that the "revenues lost" approach would be the mechanism it would employ to determine recovery for wholesale stranded costs. Stranded cost recovery is allowed for costs incurred before July 11, 1994. The "revenues lost" approach is an alternative to the asset-by asset review of recoverable stranded costs. It does not include fuel supply costs, purchased power costs (including qualifying facility costs), nuclear decommissioning costs, or costs associated with public policy programs. Stranded costs are equal to the expected revenue stream from the departing customer (based on revenues of previous three years) *less* the competitive market value estimate (based on sale of released capacity or average annual cost of replacement capacity to customer - the customer chooses the method) *multiplied by* the length time of the utility was/is expected to provide the customer with service. The equation is :

*Stranded cost obligation = (revenue stream - market value estimate) * length of expected obligation*

The departing customer may choose to market the released capacity and associated energy (or to contract with a marketer to market for them). Alternatively the customer may chose to broker the released capacity and associated energy (or to contract with a broker). Payment of the stranded cost obligation can be made by the departing customer to the incumbent supplier by lump sum payment, amortization of a lump sum payment over a reasonable period of time, or a surcharge on a customer's transmission rate.

The revenues lost approach could might considered for calculating recovery of stranded costs associated with retail access. However, FERC warns against this because the customer's option to market or broker the released energy and capacity may not be practical in the case of retail wheeling.

- *The Rhode Island Legislature*

In August, 1996 the Rhode Island legislature passed a law which introduces retail competition by 1998. Utilities are required to place a market value on 15% (or higher, if required by other New England states) of their non-nuclear assets. The method of stranded asset valuation will be conducted through a market valuation (sale or spin off) as proposed by the utility. The valuation must be completed by 1999. Generating plant commitments and regulatory assets are to be recovered over twelve years but the return on equity would be reduced to 1% above the rate on long-term triple B bonds. Purchase power contracts and nuclear costs would be recovered as incurred through the remaining terms of the obligations. A non-bypassable surcharge imposed on all customers would be fixed at 2.8 cents per kilowatt hour in 1998-2000 and would vary thereafter (expected to decline to 0.5 after twelve years with full recovery within twenty five years).

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[96] 61 Fed. Reg. 21, 658 (1996)

- *The California and Pennsylvania Legislatures*

California's restructuring law, passed in August 1996, authorizes phased-in implementation of retail competition beginning in 1998 and ending in 2001.[97] The legislation mandates that the two largest utilities in the state (Southern California Edison and Pacific Gas & Electric) divest from fifty percent of their fossil fuel plants (excluding nuclear assets). Stranded costs are defined as: costs for generation-related assets; related regulatory assets; nuclear settlements, and power purchase contracts included in rates before December 20,1995; property additions to existing generation equipment made after this date which are deemed reasonable and recoverable by the PUC; and costs to refinance or retire utility capital and associated tax liabilities. The legislation dictated that calculation of stranded costs must reflect the net above-market and below-market utility-owned generation assets. Valuation must be based on appraisal, sale, or divestiture and made by December 31, 2001. The utilities' use of the a competitive transition charge (CTC) for recovery of costs associated with generation assets is set to expire on December 31, 2001, for power purchase contracts for the life of the contract and for employee transition costs, December 31, 2006.

In November 1996, the Pennsylvania legislature passed into law the Electricity Generation Customer Choice and Competition Act, permitting the phased-in introduction of retail competition.[98] The law gives authority to the Pennsylvania Public Utility Commission (PUC) to determine the level of "transition or stranded costs for each utility and to provide a mechanism, the competitive transition charge for recovery of an appropriate amount of such costs."[99] CTC recovery is limited to nine years. The PUC will determine costs on a net present value basis. Recovery of stranded costs are permitted for the following: net plant investments and costs attributable to the utility's power plants and facilities; regulatory assets and other deferred charges; the unfunded portion of projected nuclear power plant decommissioning costs; the cost of disposal of spent nuclear fuel; cost obligations associated with NUG projects that have received a commission order prudently incurred costs associated with cancellation, buyout, buydown or renegotiation of NUG projects; long-term power purchase contracts entered into under PURPA; and costs related to restructuring of the industry (employee severance, retraining, early retirement, at reasonable levels).

In both cases recovery of non-mitigable stranded costs are collected from all customers through their distribution companies via a transition charge. In addition, each law authorizes, but does not require, the securitization (in this case, the issuance of a debt instrument such as bonds to pay for costs incurred today) of utilities' stranded costs. Securitization allows each state's investor-owned electric utilities to

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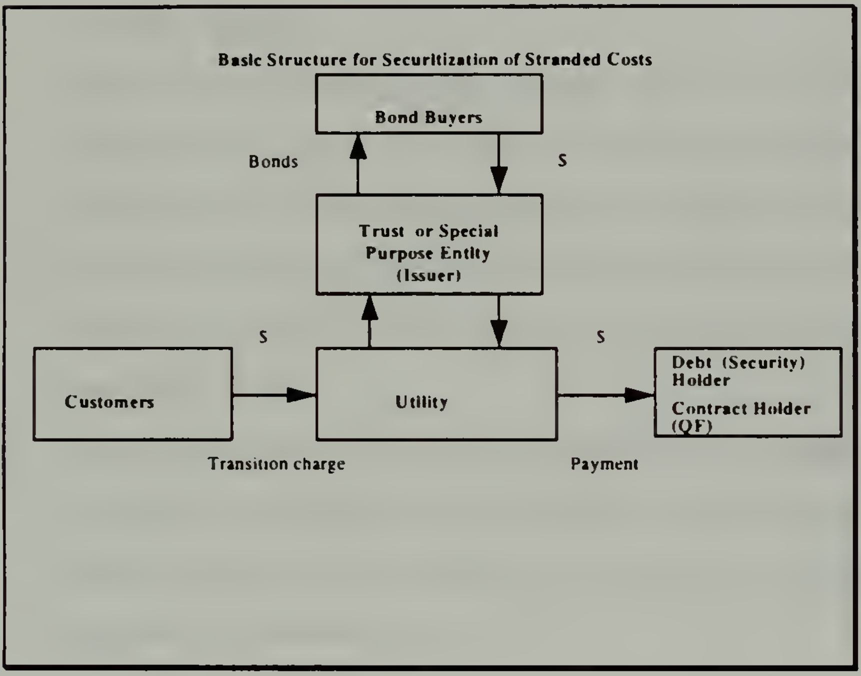
[97] California Assembly, Assembly Bill 1890, signed into law September,1996.

[98] House of Representatives, Pennsylvania House Bill 1509 signed into law on December 3,1996

repay funds used to refinance regulatory assets or obligation, and to voluntarily buy-out or otherwise renegotiate purchase power contracts with future revenues. Future revenues are guaranteed through the non-bypassable charge to existing customers (competitive transition charge (CTC) in California and intangible transition costs (ITC), which is considered a part of an aggregate CTC in Pennsylvania) to all customers (even if they exit the system).[100] Thus, the security or bond payment, are repaid through the CTC/ITC. In Pennsylvania, the utilities will collect ITCs and pay those revenues to a special financing entity which takes ownership the utility's stranded assets, issues the bonds, receives ITC revenues and pays bondholders. In California, the utilities will sell the rights to the future revenues to the State's Economic Development Bank or to a financing entity (trust). The trust will finance the purchase of the rights through the sale of securities. Utilities will use the proceeds from the sale of the right to CTCs to refinance their stranded costs. [101]



In both states, legislative authority was necessary to create and allow collection of a CTC and to permit the commissions to determine the appropriate CTC. Sunset provisions are built into this authority. These legislatures expect that savings produced from lowering the utilities' cost of capital, through securitization, will reduced utilities' stranded costs and be passed on to all consumers.

Options for Mitigation and Recovery of Stranded Costs

Prior to engaging in negotiations on methodologies or recovery mechanisms, the legislature should first determine when and how they expect retail competition to be introduced. In doing so, they should remember that immediate open access for all consumers may be the fairest approach, but it could be difficult to administer the necessary changes in a short period of time. The time allocated for implementation of retail competition will also affect associated stranded costs - the further it is in the future, the lower the stranded costs. Postponing competition well into the future allows electric utilities to continue

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[99] This includes the intangible transition charge (ITC) which may be incurred if securitization is pursued.

[100] Here, the term intangible refers to an asset that represents a legal claim to some future benefit otherwise known as financial assets.

[101] Extracted from materials presented by Goldman Sachs to Members of the Massachusetts Legislature, January 25, 1997

to collect the costs of their investment through rates. There are a number of options the legislature should contemplate when making policy decisions concerning stranded costs recovery. Each of these has its own advantages and disadvantages which will have to be carefully considered.

Options for the Legislature to Consider

Utility Mitigation

- Encourage mitigation of stranded costs associated with PPAs and generation assets through incentives. Such as a requirement that no stranded cost recovery be permitted until certain mitigation standards are met. The legislature may be explicit about the standards - identify a percentage of overall costs to be mitigated or list certain steps that must be taken before attempting cost recovery. For example, require that a utility attempt to have a facility declared an Economic Opportunity Area (described in Section 10, under Options).
- Reduce utility's authorized rate of return. Under the existing rate-of-return regulatory system, reducing a utility's rate of return will lower its revenues, earnings, and rates. For example, reducing a utility's authorized return from 10 to 8 percent for a given rate base will reduce earning to shareholders by 20 percent, thus lowering the utility's revenue requirement and the rates the utility can charge to collect that revenue. However, if the rates are held constant, the utility can use the revenue saved to reduce its stranded costs.[102]
- Allow utilities to accelerate the depreciation of their assets. Under existing regulation utilities recover the costs of their plants using straight-line accounting. Accelerated depreciation would permit them to recover their costs in a shorter time period, but would raise rates, under existing cost-of-service regulation, in the short term.

Recovery of Costs Deemed Non-Mitigable

- Ensure that stranded cost recovery is tied-in to the opening of retail markets in legislation.
- Authorize an access charge, collected through the distribution bill, to pay for some or all of the incumbent utility's stranded cost obligations.
- Introduce a consumption tax based on per kilowatt hour usage. The Department of Revenue would administer the collection of the tax, and work in coordination with the DPU to redistribute appropriate funds to utilities.
- Authorize companies/or a government financing authority to securitize some or all of an electric utility's assets. In conjunction with this, the legislature would need to authorize a non-bypassable charge on customers' distribution bills to return the securities. In addition, authority will need to be given to the DPU to review the charges.

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[102] EIA, *The Changing Structure of the Electric Power Industry*, p.147

- Encourage divestiture from generation assets. This would provide an immediate market valuation of utility generation assets and their associated stranded costs. It also addresses potential problems with horizontal market power.
- Allow for recovery of certain regulatory assets such as employee retirment and retrianing costs, or ncuelar decommissioning funds.
- Levy an entrance fee for customers who leave the incumbent utility (to self generate or to purchase power from an alternative supplier) but choose to return to the system. The fee would be used to offset utility's stranded obligations.
- Levy exit fees on departing customers. These could be based on the revenues lost by the utility from the loss of that customer. The fee would be used to offset utility's stranded obligations.

Stranded Costs Assessments

- Reinforce the DPU's authority to review stranded costs and to determine the amount to be charged (through an access charge, tax, fee or any other mechanism the legislature deems appropriate) to each customer.
- Confirm approval of the DPU's PV approach to measuring stranded costs, or authorize another viable methodology.

VIII. Consumer Issues

Lower prices, wider customer choice, and technological advances are among the potential advantages of retail competition. Ideally, each of these benefits will be enjoyed all Massachusetts consumers. At the same time, however, important consideration must be given to the potential negative impacts of a competitive electricity market. Movement away from consumer protection, reasonable rates and quality of service could negatively affect consumers, particularly smaller ones, who have less bargaining power. In addition, a diminution of low-income programs poses a threat for less advantaged consumers. The need to protect consumers requires that existing rules and regulations be adapted to the competitive marketplace.

The electric industry has long been characterized as a "business affected with the public interest."[103] As such, electricity providers have operated under unique rules, which afford them special protections, but also impose certain responsibilities. Currently, there are statutes and regulations in Massachusetts which ensure all consumers certain guarantees and protections for electric service. For example, gas and electric utilities must provide service to every customers within their service territory (universal service).[104] In addition, they are prohibited from terminating service if the customer is in financial hardship, over the age of sixty-five, is seriously ill, or has an infant in the household.[105] Finally, low-income customers are provided a discount rate.

Under cost-of-service rate regulation, the costs of these provisions are included in the rates charged to every customer class. Because the current rules apply only to vertically-integrated electric utility companies, these obligations will place them at a disadvantage in an open retail market. The unbundling of generation and distribution functions and the entry of new suppliers in the market will make the administration of these programs difficult. However, there are new models and mechanisms continuously being put forward which accommodate traditional protections in a competitive market. The remainder of this section summarizes some of the options available.

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[103] The term is traceable to the decision rendered by the United States Supreme Court in *Munn v. Illinois*, 94 U.S. 113 (1877)

[104] G.L. c. 164 § 60

Consumer Education and Participation

In order for customers to realize the benefits of restructuring they need to understand the changes they will see in their electricity service and to be knowledgeable of the options available to them. Consumers are accustomed to vertically-integrated companies that provide all aspects of service, such as special programs for energy efficiency, for example. As the market is unbundled, some customers may relish the idea of seeking new energy suppliers while others may find the choices and changes confusing. In either case, citizens are entitled to know and understand what changes are occurring. In addition, there should be ongoing educational measures taken as the market develops and the need arises.

Options for the Legislature to Consider

To some extent the public hearings held by the DPU, the Special Committee on Electricity Restructuring, and other committees of the legislature have already begun the education process. Other measures will need to be implemented to ensure that consumers have adequate knowledge, or at minimum, know where to receive assistance. Policy makers and regulators could conduct a marketing campaign to explain the changes and their impact. Within this campaign, a number of steps can be taken to ensure that customers have adequate and timely information, they include encouraging or mandating the DPU to do the following:

- Issue public service announcements/commercials on television, radio and the Internet. Advertisements could be placed in local papers.
- Establish and support a toll free number at the DPU which provides recorded information on the changes customers can expect. The same information can be provided in written form on the DPU Internet site. In either case, callers could be able to leave a message and receive a response if they have an inquiry. The number and address could be well advertised.
- Provide all citizens with a written explanation from the state. This could be in the form of a bill insert from existing electric utilities, or in a separate mailing from the state.
- Conduct public hearings in Boston, Worcester, Springfield and Pittsfield where the DPU staff conducts a "lesson on the retail competitive market" for citizens.[106]

The legislature would have to appropriate adequate funds for these measures.

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[105] G.L. c. 164 § 124 et seq.

Adequate customer information is important not only for the transition period, but also once the market is established. In order to ensure that customers have adequate information on an ongoing basis the legislature could do the following:

- Grant the DPU authority to make the selected documentation information collected from market participants available to the public.
- Encourage the DPU to issue regulations which require customer bills to be easily understandable, but also informative.
- Mandate that technical expertise be provided by the state to assist consumers in exercising their right to choose new electricity supply options.
- Continue to promote customer participation in public decision making. The deregulation of retail supply markets will eliminate some of the public forums through which consumers have had a voice. A special committee on deregulation (for gas, telecommunications and electric) at the legislature could provide a forum for continued public participation. Ensure the Attorney General's Office continues to have adequate funding to represent consumers.
- Mandate that the ISO/PX publish the day-ahead and previous day final settlement prices for electricity trades made through spot market on a daily basis.[107]

Consumer Protection[108]

One of the main policy goals of restructuring is to reduce electricity prices for consumers . In order to ensure that all customers experience the benefits of competition, the legislature might ensure that the opportunity for rate relief is available to all customers whether they chose to enter the market or not.[109] However, legislators need to recognize that the energy market, like any, is subject to volatility. This volatility has always been present, however, cost-of-service regulation has protected from consumers. A market where customers have choice is also a market where customers will be more vulnerable to price fluctuations. New market players and products, new rules and increased exposure to price volatility will challenge the consumer to think more carefully about their electricity service. Consumers cannot be expected to have a sophisticated understanding of the system or to be interested in actively participating in it. Policy-makers can pursue two broad options to help insulate customers. They could decide electricity is

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[106] The DPU established a Consumer Education Advisory Task Force (CEATF) to examine similar options. DPU 96-100 *Model Rules and Legislative Proposal*, p. G-1

[107] This is a requirment in England and Wales.

[108] This section draws heavily from two papers commissioned by the National Council on Competition and the Electric Industry, the Electricity Restructuring Series: Nancy Brockway and Michael Sherman, *Stranded Benefits in Electric Utilities Restructuring* (October, 1996) and Roger D. Colton, *Assessing the Impacts on Small-Business, Residential and Low-Income Consumers* (October, 1996). It also includes many of the ideas expressed in the DPU 96-100, *Model Rules and Legislative Proposal.*

[109] In the settlement offer between NEES, the Attorney General and other signatory parties, as approved by the DPU, a ten percent rate reduction was included.

now like other goods in the competitive market and choose to remove the special protections afforded to electricity consumers. In this case, electricity would become subject to generic state rules of fair trade, or they could choose to incorporate special protections directly in the rules governing the electricity market.

Ensuring Customer Rights and Benefits

- The legislature may require any standard offer to include a mandatory rate discount from exisitng electricity prices.

A broad consensus has formed around the concept that the distribution sector, at least the wires function, will remain a regulated monopoly in the near term. Given this, interested participants have focused their efforts on accommodating consumer protections through the distribution company. For example, to provide for those who do not exercise their right to choose a new energy supplier, the distribution company could be required to provide energy under a standard offer. The standard offer rate would be subject to DPU tariff guidelines and available only to those customers who choose not to leave their current electricity supplier. Created as a transitional mechanism, standard offer requirements would have sunset clauses.

- Ensuring Universal Service Through The Standard Offer and Default Service

Distribution companies could also be required to offer default service on an interim basis, to customers who initially chose a different supplier but return to their former utility for service. this option would safeguard customers who have been terminated by a supplier (making the distribution company the supplier of last resort). To meet the load requirements of these services, the distribution company might be permitted to procure the power from their generating affiliate. Alternatively, it could be required to solicit bids or go to the spot market for power. In addition, the rates charged for these services could be reviewed by the DPU for affordability.

Information Access for Suppliers and Customers

Marketing information is a valuable commodity in any competitive market. Generation suppliers, energy service companies, marketers, aggregators and other market participants have a keen interest in knowing the demographics and load profiles of potential customers. Incumbent utilities have an competitive advantage over them because they already have that information. Policy-makers must balance the need for equity among service providers and the privacy of consumers. Clearly, no one is interested in encouraging the ‘slamming’ techniques associated with the telephone industry. In order to avoid these pitfalls, rules for contacting and contracting with consumers need to be set in place by the DPU. Distribution companies could be required to receive their customer’s permission prior to giving or selling any information. Restrictions could be placed on the type of information provided. Customers’ written consent could be

made mandatory before a new supplier or other service provider begins service. Similar measures were included in the restructuring law passed in California.[110]

Certification of market participants could be utilized to protect consumers in two ways.[111] First, licenses would help to ensure the financial and legal credibility of the applicant. One way to do this would be to require applicants to post a bond. Second, certification can be used as an enforcement mechanism for quality of service and protection against reasonable rates. The state could issue a list of standards by which licensees must abide. The state could design a "Consumer Bill of Rights" similar to that issued by the Vermont Public Service Board.[112] Compliance could be checked with a periodic inspection complaint records filed at the DPU and Attorney General's Office. License revocation or punitive damages could serve as enforcement mechanisms and be administered by the DPU or Office of the Attorney General. All generation suppliers, aggregators and marketers might be required to register with the DPU and this information might be made available upon request for the public.

Promoting Fair and Nondiscriminatory Practices

Traditionally, universal service provisions have prevented the practice of "redlining" and have guaranteed rural areas service. Redlining is the practice of companies discriminating against certain geographic area based on its demographics. The company could devise a ruse to provide service or may provide service on unequal terms. As competitive suppliers seek out market areas, they may, even unknowingly, practice redlining. An "effects test," such as those used in federal statutes covering employment, housing, consumer credit, and home mortgages could be used to prevent discrimination.[113] A disclosure requirement could also be imposed on suppliers. In rural areas, access rates could be set equal to those charged to customers in more densely populated areas. The cost for this service would be shared by all rate payers in the distribution company's territory.

As with other industries, credit history often plays an important role in determining whether or not a customer will receive service. This has not been the case for electricity, where delinquent customers continue to be supplied and utilities are permitted to recover these losses through their rates. The absence of rate regulation and the pressure of competition are likely to eliminate this practice. In its place, state government needs to establish standards which all suppliers and distribution companies, or any bill collector, must follow. These might include: no denial of distribution access for nonpayment of an energy supply (not wires) bill, stringent limitations on the ability of a supplier to deny service, limitations on the

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[110] California Public Utility Code § 366 & 367

[111] Certification requirements are included in the California Public Utility Code § 394

[112] Vermont Public Service Board, *Investigation Investigation Into the Restructuring of the Electric Utility Industry in Vermont*

size of deposits, and requiring competitors to maintain written credit and collection policies.[114] As with the current practice, billing disputes would be arbitrated through the DPU.

Purchasing Power Cooperatively

Small businesses and residential rate payers have much more inelastic demand than industrial and commercial customers. Consequently, they may be more vulnerable to price volatility and gauging. By joining together customers can use their collective buying power to procure power at rates lower than would be available to them as individual customers. Aggregation of load could occur under two broad approaches. First, the distribution company could be the purchaser of electricity on behalf of its customers. This would essentially make the standard offer a permanent institution. If the goal is to encourage retail competition, this option is limiting. Second, communities and other organizations could form cooperatives. The aggregation of substantial loads in a buying block can be used to negotiate favorable terms, not only on price, but on such community values as energy efficiency, renewable power and low-income provisions.[115] Over the past year, a number of groups have expressed an interest in aggregating loads. These include organizations such as the Massachusetts Health and Educational Facilities Authority as well as local governments from Barnstable County and the Town of Lexington. [116]

Low Income Programs

In addition to the consumer protection measures discussed above, electric utilities are currently required to offer a low-income tariff. This tariff is provided to customers who

> (1) must be the head of a household or principal wage earner, and
>
> (2)currently receiving (a)Supplemental Security Income from the Social Security Administration; or (b) Aid to Families With Dependent Children, Emergency Aid to the Elderly, Disabled and Children, Refugee Assistance, Medicaid, or Food Stamps from the Massachusetts Department of Public Welfare. (c)Veterans Services Benefits from the Massachusetts Veterans Service Administration or (d) Low Income Heating Energy Assistance from a certified Community Action Program Agency[117]

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[113] Roger D. Colton, *Assessing the Impacts on Small-Business, Residential and Low-Income Consumers*, p.7

[114] Roger D. Colton, *Assessing the Impacts on Small-Business, Residential and Low-Income Consumers*, p.13

[115] Roger D. Colton, *Assessing the Impacts on Small-Business, Residential and Low-Income Consumers*, p.7

[116] The Massachusetts Health and Educational Facilities Authority, HEFA, initiated "Power Options,The Masschusetts Nonprofit Energy Purchasers Consortium."

In 1994, a total of twenty-two million dollars was spent on aid to such individuals in Massachusetts.[118] The cost of the subsidy is rolled into the rates of all customer classes. In addition, utilities offer programs such as payment planning assistance. The pressure to reduce rates for every customer class in a competitive retail market could result in utilities' decreasing willingness to maintain such price reductions for low-income customers. Although participants in public hearings have indicated they would not do so, policy-makers need to consider new mechanisms which guarantee an equitable sharing of these costs among all providers and customers. [119]

Given the general consensus to continue low-income assistance, policy makers must determine how to collect and distribute the necessary funds. These mechanisms would unbundle the costs of the subsidy on everyone's electric bill and would ensure low-income customers access to all competitive suppliers. When assessing funding alternatives, it is essential to acknowledge that the costs of low-income subsidies are already in today's rates. In addition, the goal should be to ensure that the program does not place an unfair burden on one class of suppliers or consumers. Along this line, consideration should be given to adopting the same system for gas distribution and requiring oil heat suppliers to offer low income tariffs.[120] The administrative costs of the options should be analyzed and evaluated. Finally, it should be noted that a distinction needsto be made between low-income assistance for stranded costs and assistance on an ongoing basis for supply and distribution costs.

Options for the Legislature to Consider

- Treat electricity like other essential commodities such as food. Under this scenario, the state government would administer the payment of the subsidy through vouchers, stamps (similar to Food Stamps) or direct payment via check or an electronic funds transfer.[121] To pay for this assistance, the state would implement a tax on all consumers electricity bills. The tax could be in the form of a flat fee, consumption (per Btu), or revenue based (per dollar spent) charge.[122]
- Introduce a percentage discount on the wires fee charged by the distribution company to low income customers at the level it currently exists. The discount would be on the wires service, but would be a large enough percentage to keep the payment of the combined energy and distribution costs at their

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[117] DPU 96-100 *Model Rules and Legislative Proposal*, fn 110.

[118] Nancy Brockway and Michael Sherman, *Stranded Benefits in Electric Utilities Restructuring* , p.17

[119] A number of participants in the DPU restructuring docket and hearings held by the JointCommittee on Electric Utility Restructuring advocated continuing low-income subsidies of some type.

[120] As regulations current exists, oil and propane suppliers are not required by regulation or statute to participate in low-income and energy efficiency programs.

[121] For an example of smart-card application see, Mary Jo Bahr and Thomas Zack, "A New Billing Strategy for a Local Gas Distributor," *Public Utilities Fortnightly*, January 15, 1997, p. 26-28.

[122] For a cost analysis of different wires charges and tax approaches see Fisher, Sheehan & Colton, *Funding Stranded Benefits For Low-Income Consumers In A Restructured Electric Industry: A State Data Book* (Boston: November, 1996)

current level of savings. The customer would be able to choose the actual energy supplier. The distribution company would recover the subsidy costs through its rates. The DPU advocates this approach and recommends that the discount should be applied to the stranded cost charges in the transition period.[123]

- Create a universal service fund which all competitive retail energy suppliers pay into. Such a fund would reimburse all suppliers based on the number of low-income customers they serve. All suppliers would be required to offer a low-income tariff to qualifying consumers. This would help prevent redlining (low-income customers are likely to be concentrated in certain geographic areas), as suppliers would be less likely to avoid low-income service areas. The Federal Communications Commission's "high-cost/low-cost fund", which protects high rates in rural areas, could be used as a model.[124]

In addition to continuing low-income discounts, policy-makers could encourage the development of load aggregation for low-income customers. As mentioned earlier, load aggregation would increase the buying power of low-income customers and reduce the energy costs. Organizing low-income customers into a purchasing group might be administered through agencies such as the Department of Housing and Community Development or Division of Energy Resources.

Energy Efficiency Programs

Prompted by a decade of rising energy prices and fears of capacity shortage, a number of states had implemented integrated resource planning (IRP) and demand side management (DSM) rules by 1990. In Massachusetts, the DPU encouraged utilities to pursue IRP and DSM measures through rate of return incentives. Customers were able to participate in these programs at little or no cost because the measures were paid for through rates. Because of the state's comprehensive requirements and technical expertise, a large and nationally prominent energy service industry has developed in Massachusetts over the past six years. A number of participants in the restructuring debate have suggested that energy efficiency programs should be part of the competitive market and offered as a customer service, paid for by the recipient. Others contend that market barriers such as lack of customer knowledge mean that there will not be a robust market for energy efficiency services.

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[123] DPU 96-100 *Model Rules and Legislative Proposal*, p.36

[124] Nancy Brockway and Michael Sherman, *Stranded Benefits in Electric Utilities Restructuring*, p.15

Current Programs

All the investor-owned and some municipal utilities offer energy efficiency measures for lighting, heating, water heating, air conditioning and other sources at little or no cost to their customers.[125] Electric companies are encouraged to implement IRP measures through requirements and financial incentives such as authorizing utilities to seek recovery of DSM program costs and lost revenues.[126] Each company files annual plans with the DPU in which its program's costs, design, implementation, monitoring and evaluation plans are reviewed. In 1994, privately-owned and publicly -owned utilities spent around 122 million dollars on these services.[127] The costs of these programs are recovered through customer rates. However, there has been a fall in the amount of utility expenditure on DSM programs as companies anticipate the introduction of competitive markets.

Historically, many of the demand side management and other energy efficiency programs described below were designed to assist low-income customers in particular. For low-income customers, there are considerable market barriers (such as knowledge and financing) which would prevent them from purchasing the energy-saving services and equipment. Low-income customers typically live in housing where energy efficiency installations could provide the most economic benefits and improvements in comfort. These measures may improve the affordability of electricity and in doing so, reduce the utilities delinquent payment costs.

State agencies, often in conjunction with the federal government, offer a number of programs to introduce energy efficiency and weatherization measures in homes and businesses. These include the Office of Economic and Community Development's weatherization assistance program (WAP),[128] and a broad array conducted by the Division of Energy Resources: Energy Conservation Service, Institutional Conservation Program, Energy Engineering Program, Energy Advisory Service, the Strategies Envirotechnology Partnership, Alternative Dispersed Fuel Transportation Development, Dispersed Generation Development and Landfill Gas Recovery Program.

The continuation of private sector demand side management within a deregulated regime could be addressed by any of the following options:

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[125] Braintree, Danvers, Hingham, Middleborough, Peaboday, Taunton, MMWEC and WMPUC conducted DSM programs in 1995.

[126] 220 C.M. R. et seq.

[127] Energy Administration Information, *U.S. Electric Demand-Side Management 1995*, DOE/EIA-0589(95), (Pittsburgh : U.S. Government Printing Office, January, 1997) p. 66-67

[128] The Department of Housing and Community Development also coordinates the federal (LIHEAP) fuel assistance programs.

- Remove the utilities' (supplier and distribution companies) obligation to provide these services. Allow energy services such as DSM to be in a market where companies, such as energy service companies (ESCOs), compete to offer these service to all customers. Customers would pay to receive this service. The state could provide low-income customers with rebates, coupons or another form of assistance to help pay for the costs.
- Implement a competitive energy service market, but instead of providing low-income customers with direct financial assistance, the state would reimburse providers on a per low-income customer basis.
- Require the distribution company to offer energy efficiency programs (either their own, or by contracting out to ESCOs) and recover the costs through:

  a non-bypassable access charge on a per kilowatt-hour basis to any supplier participating in the market (passed on FERC registration requirements) or,

  a non-bypassable surcharge based on per kilowatt hour use or a flat fee, on individual end-users.[129]

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[129] Nancy Brockway and Michael Sherman, *Stranded Benefits in Electric Utilities Restructuring*, p.37

IX. The Environment

The environmental impacts of electric utility restructuring have been of major interest since the beginning of the reform initiative. The attention has developed from two areas of concern. First, many observers believe that electricity markets will change electricity demand patterns, which in turn, will alter supply sources. Second, some environmental protection mechanisms rely on the cost-of-service regulatory structure. As rate regulation is replaced with market based tools, it is thought that these will disappear as well. Undoubtedly, transformation of the electricity industry will affect the state and federal practices concerning environmental protection, energy efficiency and renewable energy. This section reviews the existing regulatory practices associated with environmental protection and provides some new approaches, for a competitive retail environment, for consideration by the legislature.

The Electricity Industry's Impact on the Environment

The electricity industry affects the environment in several general ways: transmission, distribution and generation construction/siting; dismantling/decommissioning of facilities; air and water pollution. Public health, aesthetics and land use are among some of the concerns associated with facilities construction and decomissioning. Liquid effluents and water temperature affect the body of water utilized by facilities. While all of these are important matters, air pollution has received the most attention. The generation of electricity from fossil fuels contributes to at least four forms of air pollution:

Sulfur dioxide (SO_2) -	is a gas that can cause acid rain and can affect the heart and lungs.. Once in the air, it can change into small particulates.
Nitrogen oxide ($NO_{2)}$-	is a brownish gas which can have the same effects as SO_2. It also has the potential to contribute to ground level ozone (smog) which can harm vegetation and respiratory systems.
Particulate matter (PM) -	dust, soot, dirt, and aerosols are classified as PM. It can cause heart and respiratory disease, including cancer.
Greenhouse gases-	carbon dioxide (CO_2) is the main component of these. Greenhouse gases are believed to contribute to global warming.

In addition, nuclear generation produces low level radioactive air, and water emissions. Estimates of the health risks and monetary costs of these environmental affects vary widely, making it sometimes difficult for decision makers to design the appropriate public policies.[130] However, state and federal regulators

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[130] Office of Technology Assessment, Background Paper, *Studies of the Environmental Costs of Electricity*, OTA-ETI-134 (Pittsburgh: U.S. Government Printing Office , 1994) p. 1-2

have recognized the potentially harmful effects of these pollutants and, over the past three decades, have designed rules to limit their production

Current Status of Environmental Protection

Federal and state government regulate environmental externalities related to the electricity industry. The Environmental Protection Agency (EPA) is the chief regulatory body which implements laws passed Congress. The major federal environmental laws effecting electric power are :

> The National Environmental Policy Act of 1969 (amended in 1975 and 1982) which requires all Federal agencies to undertake the preparation of an environment impact statement prior to the construction of new nuclear, Waterelectric, and at times, fossil-power plants and high voltage transmission lines.
>
> The Clean Air Act of 1963 as amended in 1970, 1977, and 1990: which regulates the emission of particulate matter, sulfur dioxide, nitrogen oxides, carbon monoxide, ozone, and lead from fossil-fired power plants. The goal of the 1990 legislation was to reduce annual sulfur dioxide and nitrogen emissions to set levels. Generators of electricity are responsible for a majority of these emissions. In the case of sulfur dioxide, the EPA has instituted a market allowance program which distributes pollution rights to generators (according to emission limit set by the law) who can buy or sell them as needed.
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> The Federal Water and Pollution Control Act of 1972, amended by the Clean Water Act of 1977: regulates the use and discharge of water by power plants through required operating permits.
>
> The Nuclear Waste Policy Act of 1982: specifies that while the federal government has the responsibility to provide for the disposal of high-level radioactive wastes an spent nuclear fuel in order to protect public health and safety and the environment, generators and owners of the waste and spent fuel to have the primary responsibility to pay for its interim storage. It also established procedures for decommissioning and other disposal concerns.
>
> Energy Policy Act of 1992: contains voluntary provisions with respect to global warming issues. Utilities voluntarily report greenhouse gas emissions to the Department of Environment. Also, there are a number of provisions encouraging the development of alternative fuels , renewable technologies in an effort to reduce smog, greenhouse gas

emissions, and acid rain. In addition, the law provided a ten percent energy tax credit for solar and geothermal projects and established an electricity Production Credit, which grants a 1.5 cent/kWh ten-year tax credit for electricity generated using new wind facilities and some types of biomass (for example, waste-to energy) technologies.

Recent activities at various federal agencies impact electric utilities as well. In Order 888, FERC determined that it is not within its authority to address the potential environmental impacts of open access on transmission lines. The Environmental Protection Agency, under the auspices of the Clean Air Act, has proposed a new National Ambient Air Quality Standard (NAAQS) for fine particulate matter. There are existing rules for fine particulate matter emitted from power generation facilitates, however the proposed rules would require the reduction of much smaller particulates (less than 2.5 microns in diameter).[131] These fine particles are emitted from facilities but many are also produced by the combination of sulfur dioxide and nitrogen oxide in the atmosphere, so adoption of these rules would mean utilities need to reduce their emission of these pollutants. In addition, the EPA has proposed more stringent rules for ground level ozone.[132] This could pose a new challenge to Massachsuetts regulators as the entire Commonwealth is already classified as a "serious" non-attainment area for ozone under the Clean Air Act Amendments of 1990.[133] New ozone control requirements would be determined by the states. In the meantime, the Ozone Transport Assessment Group (OTAG), a regional body authorized under the CAA, is working to promote regional cooperation in pollution control. In June of this year OTAG is scheduled to release its proposals for pollution control in a restructured electricity market.[134]

State governments practice oversight through rate and environmental regulations. In Massachusetts, the Department of Environmental Protection oversees the state's compliance with federal air and water quality standards as well as designs the necessary state regulations and the Department of Public Health monitors radioactive emissions from the Pilgrim nuclear power plant. The DPU has traditionally promoted environmental protection by advocating programs targeted at reducing pollution and applying stringent rules for facilities construction. Given that the focus of this report is restructuring the economic regulation of the electricity industry, which is performed by the DPU, the remainder of this section will concentrate on the activities of the DPU. The DPU has attempted to reduce the environmental

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[131] "National Ambient Air Quality Standards for Particulate Matter, proposed rule." 61 Fed. Reg. 65,638 (1996)

[132] "National Ambient Air Quality Standards for Ozone, proposed rule." 61 Fed. Reg . 65,716 (1996)

[133] "Though ozone requirements have exhibited a downward rend since that time, they continue to occur at unacceptable level.s Even in the unusually cool summer of 1996 the Commonwealth experiences two ozone exceedances." Letter to Senator John O'Brien, from Allan Bedwell, Deputy Commissioner, Massachusetts Department of Environmental Protection, January 29, 1997.

[134] Mary Gade, Chair, OTAG, presentation at the John F. Kennedy School of Government, Harvard University, February 24, 1997

impacts of the electricity industry through integrated resource planning (IRP), utility demand side management (DSM) program requirements and siting rules.

- *Integrated Resource Planning (IRP)*:

The concept of IRP was developed in the late seventies as state regulatory bodies began to take an interest in the plant construction plans of utilities. Prior to this time, utilities built facilities with limited regulatory oversight and but avoided market risks because they could recover their costs through rates. During the late seventies some of the utilities' investments became controversial, and a number of states implemented a form of the IRP process in order to force utilities to take a more balanced approach to investment. IRP can take on a number of different forms, specific to the circumstances of each state. In order to promote a uniform approach to IRP, a national policy on IRP was included in EPAct.[135] In general, IRP requires electric utilities to incorporate a planning and selecting process for fulfilling its supply obligations by ensuring that a utility evaluates the full range of alternatives, including new generating capacity, power purchases, energy conservation and efficiency (DSM), cogeneration and district heating; and renewable energy resources, in order to provide adequate and reliable service to electrical customers at the lowest systems costs (interchangeable with least-cost planning).[136] Each of these alternatives is assessed by a number criteria and the evaluation process can be very complex as well as lengthy.

The Massachusetts DPU began to develop IRP regulations in 1986, and comprehensive rules were adopted in August, 1990 in Order 89-239.[137] Following an investigation into a petition filed by five investor-owned utilities, these rules streamlined in 1994.[138] The current approval process involves four phases and can take up to two years to complete.[139]

- *Demand Side Management Programs(DSM)*

The purpose of DSM programs is to encourage energy consumers to change their energy consumption patterns. By implementing energy saving devices and altering the time they use electricity,

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[135] EPAct § 211

[136] Energy Information Administration, *U.S. Electric Utility Demand-Side Management 1995*,p.2-3

[137] DPU 89-239, August 30, 1990

[138] 220 CMR 10.00 *et seq.*

[139] The Massachusetts DPU went one step further in its IRP by requiring utilities to specify monetary values of emission extranalities. in its all-resource externality component in is all-resource solicitation criteria. This order required electric utilities to include an environmental externality component in their criteria for evaluating resources offered in response to their solicitations for resources for QFs, assessment of conservation and load management programs, power purchase agreements, and any proposed utilty generation capacity (DPU 89-239, August 31, 1990). In 1994, the Massachussets Supreme Judicial Court found that the designation of monetary values by the DPU was beyond the range of its statutory authority. The DPU lacked the ability to regulate power generation by imposing a levy on power plant emissions. Utilities are still required to include foreseeable costs of environmental

consumers can reduce their demand and reduce energy costs. At the same time, DSM may allow utilities to manage their load, reducing the need to build new capacity. The Massachusetts DPU began to encourage utility companies -- through threats to reduce their rates of return at first and subsequently though financial incentives and requirements to do IRP -- to provide these service to their customers.[140] Electric utilities and some municipal electric companies have offered comprehensive DSM programs since the early 1990s.

Instead of developing and implementing an in-house program, many utilities have outsourced these services. As a result, a number of nationally recognized firms which provide these services have developed. In addition to providing the necessary services, these companies (often included in the category of energy service companies or ESCOs) have provided ancillary benefits such as employment and growth in research and development. In 1995 DSM programs saved an estimated 1,830 million megawatt hours of energy. [141]

- *Facilities Siting*

Another way in which the State has sought to limit the environmental impact of electric power generation is through regulation of facilities construction. Currently, the Energy Facilities Siting Board (EFSB) reviews facilities proposed for construction and issues the required certificates.[142] The EFSB is a division of the DPU, but acts independently on its decisions. The Board members are the three DPU commissioners, the secretary of environmental affairs, the secretary of administration and finance, and two public members appointed by the governor for terms of three years.[143]

Pursuant to statute, the EFSB review of a facility seeks to " provide a necessary energy supply for the commonwealth with a minimum impact on the environment at lowest possible cost..." in its evaluation of a proposal, the EFSB examines several factors in its determination of whether or not a facility should be given approval for construction. These components include an examination of alternative sites and alternative technologies, an evaluation of environment impacts and a determination need in the energy market.[144] Utilities are required to file this information with the Board, which has the authority to approve,

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controls and their impact on ratepayers for proposals and compare them with the cost-effectiveness of the DSM programs and resource decision process, however, they do not have to assign externility values.

[140] Theo MacGregor, Director, Conservation Division, Massachusetts DPU, "From regulation to Competition: Keeping Energy Efficiency in the Mix - A Regulator's Perspective"

[141] EIA , *U.S. Electric Utility Demand-Side Management 1995*, p.20

[142] Facility, as defined pursuant to Mass. G.L. c. 164 § 69G, includes:
1.Any bulk electrical generating unit.... capacble of operating at a gross capacity of 100 MW or more;
2.Any new electric transmission line having a design rating of 69kV or more and which is one mile or more in length...;
3.Any anciallary strucutre including fuel storage facility which is an integrated part of the operation of any electric generating unit or transmission line which is a facility;
4. Any unit, including associated buildings and structures, or capable of, the manufacture or storage of gas.

[143] Mass. G.L. c. 165 § 69H

[144] Mass. G.L. c. 164 § 69J In accordance with the Massachusetts Environmental Protection Act (MEPA), applicants are also required to file an environmental impact assessment with the Executive Office of Environmental Affiars (EOEA). The alternative site

approve provided certain qualifications or changes are met, or reject proposal. Although the DPU advocates renewable energy as a matter of public policy, the EFSB review does not explicitly express a preference for renewable resources. The DPU has pointed out that "the current alternative technologies analysis does not contribute to the construction of renewable generation. The analysis is just that - an analysis."[145]

The statute "requires that the energy the facility will supply is necessary for the Commonwealth." In the absence of in-state need, a facility cannot be approved. Over the past few years, several challenges to the "need" component, particularly in the case of generation facilities, of the EFSB review have been brought to court. [146] In their findings, the courts have exercised a narrow interpretation of the need requirement. In a time of surplus capacity, these rulings have limited the development of new, less polluting generation facilities. As a result of these decisions and market changes, several legislative proposals have recently been put forward to reform the statutes and regulations associated with siting.[147] It should also be noted that electric utilities are also required to file, with the DPU, ten year forecasts every three years. The long-range plans must include "a description of all existing agreements with other electric companies; a forecast of its electric power needs for its market area, and a description of actions planned by the company which may affect its ability to meet these requirements."[148] This rule does not apply to non-utility generators. Similarly, electric utilities, but not non-utility generators do not qualify for the right to petition the DPU for the right to exercise the power of eminent domain for facilities construction.[149]

Competitive Electricity Markets and Environmental Protection[150]

The shift to market-based pricing for generation raises several issues related to environmental protection. First, it threatens traditional mechanisms used to pursue environmental policies. Regulatory reform is implicit in the introduction of competitive wholesale and retail electricity markets. Indeed, one of the main reasons restructuring is under consideration in a number of states is to remove economic regulation of generation component. Similarly, many state regulators consider replacing the cost-of-service with

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review is required by Board prescedent, not by statute. Letter to Senator John O'Brien and Representative Peter Larkin, from John Howe, Chair, Massachusetts,, November 21, 1996.

[145] Letter to Senator John O'Brien and Representative Peter Larkin, from John Howe, Chair, Massachusetts DPU, November 21, 1996.

[146] *New Bedford v. Energy Facilities Siting Council*, 413 Mass. 482, 489, 597 N.E. 2d 1032 (1992) and *Point of Pines Beach Association Inc. vs. Energy Facilities Siting Board*, 419 Mass. 281; 644 N.E. 2d 221 (1995)

[147] These include two proposals put forward by the Energy Facilities Siting Board, Model Siting Statute, Drafts of October 17, 1995, April 19, 1996 and November 20, 1996.

[148] Mass. G.L. c. 164 §691

[149] For geneating facilties, gas storage, and bulk power supply substations see Mass. G.L.c. 164 § 69R . For transmission lines see Mass. G.L.c 164 § 72.

[150] Concerning the impact on divestiture of utility plants, Committee members have expressed a concern that owners of non-nuclear generators will not be required to comply with the State's oil/hazardous waste statute (Mass. G.L.c 21E) prior to transferring ownership. Some of power plants in Massachusetts are known to have an oil/hazardous materials problem. Letter to Senator John O' Brien from George Dean, Assistant Attorney General, Massachusetts Office of the Attorney General, December 12, 1996.

performance based rate making in the transmission and distribution sectors. These changes eliminate the some of the avenues through which regulators pursued environmental protection. Some market participants believe that a competitive market will create new opportunities for businesses (for example, in a competitive market, ESCOs interested in becoming an energy supplier as well as providing conservation services). Others have expressed concerns that activities which promote the policy goals of low cost, least environmental impact will be at risk in a competitive market. The main concern is that market barriers will prevent investment in conservation programs and renewable energy project. These include customers' ack of knowledge or familiarity with the services or prdocuts, and the relatively high cost of capital for new market entrants. In addition, the "free rider problem" can decrease consumers willingness to participate in programs are two potential obstacles. Under this scenario, consumers may be willing to pay more for less polluting energy alternatives, including energy efficiency, which benefit everyone. Yet there is little incentive if there is no guarantee that others are doing so. Finally, there is evidence that in a competitive market, that ESCOs or other energy service providers will not attempt to market small customers because the profit margins would be too slim.[151] A number of consumer advocates are worried that this trend will limit the small customers opportunity to reduce their electricity costs through conservation.

In addition, it is believed that market-based pricing will provide economic incentives for customers to seek the lowest cost energy suppliers. While this is a natural and desirable affect, the change could have negative environmental effects in certain areas of the country. In particular, it is feared that customers will want to purchase power from low-cost coal facilities in the Midwest. These facilities are currently operating at below capacity and have relatively cheap, surplus power to sell. In addition, they are not subject to some of the more stringent regulatory requirements, particularly for nitrogen oxide, that like facilities are in other areas of the country most comply with. Because air pollutants from the Midwest can end-up in New England's air mass, a shift in demand for supply from Midwest coal producers might exacerbate pollution problems in this area. The potential shift in demand has been the subject of several recent studies, which have concluded that the potential is there.[152] However, there is little consensus on what the real increases in electricity production and pollution will be. Several important factors such as transmission constraints which can limit the ability to wheel power from one region to another, new environmental regulations, and demand and price uncertainty can influence the outcome of the predictions.

Similarly, many observers have expressed concerns that under retail competition the existing environmental regulations favor the use of old, dirtier facilities over newer plants. Because in Massachusetts new facilities are usually subject to more stringent environmental rules than older facilities, they can be

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[151] Glenn Shippe, "The Future for Energy Service Companies: Changes and Trends," *The Electricity Journal*, July 1996, p.82

[152] See Karen Palmer and Dallas Burtraw, "Electric Restructuring and Regional Air Pollution" (Resources for the Future, Washington, DC:1996) Discussion Paper 96-17 REV; FERC, *Environmental Impact Study of FERC Order*, 61 Fed. Reg. 21,670;

more costly to operate. In response to the DPU's May 1, 1996 Statement, several comments suggested that "without environmental comparability, newer electric generators that have borne higher capital and/or operating costs to achieve relatively low emissions rates would not be able to compete effectively with older electricity generators, resulting in higher emissions and higher costs to consumers because of inefficient competition."[153] This problem can be addressed through across-the-board environmental regulations or the guarantee of special payments/benefits to clean energy suppliers that level the playing field.

Finally, it is well recognized by many observers of the Massachusetts electricity market, that the statutes and regulations related to the siting of energy facilities, particularly electric generating equipment, are in conflict with the goals of a competitive generation market. Under the competitive wholesale market, as mandated by EPAct, energy suppliers will compete directly with other for long-term energy sales. In addition, a wholesale spot market is expected to develop to serve short-term energy needs. As discussed in Section three, energy markets will be regional in scope and generation facilities in one state are likely to be serving customers in other states or regions (subject to the limitations of the transmission system). Many suppliers are interested in participating in these new markets, but in Massachusetts, where there is excess capacity, the in-state need requirement prohibits the siting of new facilities. In addition, the complex and lengthy siting process does not necessarily fit with the dynamic characteristics of a competitive. Furthermore, the eminent domain statute, applies only to electric utilities, not non-utility generators. As suppliers assume new roles in the market, making them more homogenous, the existing statute will need to evolve in order to be fair.

Some states encourage the development of renewable energy through tax credits. Massachusetts tax law allows a deduction for the cost of implementing solar or wind units on corporations taxable net income.[154]

Options For the Legislature to Consider

Promoting Renewables and Energy Efficiency[155]

- Access fees or system benefits charges could be used to raise funds to support initiatives such as demand-side management and renewable resources that provide societal benefits. The charge should be non-bypassable and would be levied through the distribution system. It could be a usage tax (per kWh), tax on sales (per dollar of energy used) or an access charge. The revenues could be turned over

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Henry Lee and Nageen Darani, "Electricity Restructuring and the Environment," CSIA Discussion Paper 95-13, Kennedy School of Government (Harvard University: Cambridge MA, December 1995)

[153] DPU 96-100 *Model Rules and Legislative Proposal*, p. 158

[154] Mass. G.L.c 63§38H

[155] DSM options are more thorughly discussed in the Consumer Protection Section, Section VIII

to a trust, administered by the State or other party, which would distribute the money to qualified DSM or renewable projects.

- Institute a renewables portfolio standard (RPS). Every retail supplier would be required to purchase "Renewable Energy Credits' (RECs) equivalent to some percentage of its annual kWh sales. A REC would be created when a qualifying renewable energy resource is used to generate one kWh of electricity. The percentage requirement would be determined by the State. Generators could own renewable energy facilities and generate their own RECs, purchase RECs when they purchase renewable power, or purchase RECs separately - either directly from a renewable generator or an REC broker. The DEP (or other qualified agency) could be responsible for certifying the RECS and monitoring compliance.[156]
- Implement green pricing programs. In these programs electricity consumers would voluntarily pay for renewable energy development. For instance, consumers willing to pay a premium for renewable energy could do so by participating in a program that allows them to add some incremental amount of money to their electricity bills or another program which rounds up the consumer's bill to the nearest dollar, with the added quantity going to support renewable energy. The payment could be made to the supplier who would use the money to fund its own renewables development or could be collected through distribution charges and then given to qualified renewable projects. To date, there are approximately ten utilities which have introduced green pricing programs.[157]

General Programs to Reduce Environmental Impacts

- Require environmental dispatch in the spot pool. The operator of the spot market would include environmental costs when performing dispatch. Generators which meet certain environmental standards would receive discounts on their pool bid price, making their bid price lower, which could increase their ranking in the dispatch order. Alternatively, for determining dispatch, each bid could be "taxed", according to the amount of pollution a generator produces. The greater the emissions, the greater the tax, and the less likely it is to be dispatched. Recovery of the costs incurred by the generators (difference between the market clearing price of generation and the marginal cost of their operations) could be recovered through a systems benefit charge. The Department of Environmental Protection would monitor the suppliers' environmental performance to ensure standards are being met.
- Institute a generation portfolio standard (GPS). The GPS establishes an emission standard , expressed in terms of pollution per unit of electrical output lb/MWh). this standard would be achieved by establishing an emission "cap" for pollutants (NO_2 and SO_2) and dividing the fossil and renewable generation within a state or region. Each utility in the applicable region would be required to achieve an average system/portfolio emission rate consistent with the standard. Utilities which operate below GPS

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[156] Nancy Rader and Richard Norgaard, "Efficiency and Sustainability in Restructured Electricity Markets: The Renewables Portfolio Standard," *The Electricity Journal*, July 1996, p.43

would generate credits; those that exceed the standard would need to purchase credits from the market. The 37-state OTAG region, to which Massachusetts belongs, is examining this option.[158]

- Require distribution companies providing default service and a standard offer, to procure power supply through an abbreviated IRP process.
- Require suppliers to list the fuels they use in generation on customer bills. Mandate that any supplier claiming to offer "Green Power" have a certain percentage of renewable supply in their portfolio mix.
- Encourage the Department of Environment to pursue more stringent environmental standards for all energy producers. This could include, for example, the creation of an emissions cap and trade program for NO_2.
- Change tax rules to encourage the substituting of cleaner generating sources for dirtier ones.

Change Siting Statutes and Regulations

- Leave the EFSB rules and regulation untouched.
- Broaden the access of power of eminent domain for power plants to include all applicants. Retain and strengthen the requirements for local hearings.
- Eliminate the requirement that applicants file an evaluation of in-state need and costs. In order to increase the comfort level of the EFSB and other policy makers, the applicants might be required to file a long term plan with which upon which they based their decision to construct a facility. The information contained in these document would be treated as propriety and access to such documents could be restricted. furthermore, the M.E.P.A. process could be enhanced as necessary.
- Eliminate the EFSB review of all aspects concerning the siting of generation facilities. Applicants would still be required to file an environmental impact statement with the Executive Office of Environmental Affairs. The EFSB would still review applications for transmission facilities, bulk power supply stations, gas pipelines, and oil facilities.
- Discontinue the alternative site and alternative technology review.

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[157] EIA, *The Changing Structure of the Electric Power Indsutry*, p.44

[158] Description of the GPS taken from a letter to Senator John O'Brien, from Allan Bedwell, Deputy Commissioner, Massachusetts Department of Environmental Protection, January 29, 1997.

X. Municipal Issues

This chapter discusses retail competition as it relates to existing municipal systems. It also addresses the potential opportunities available to cities and towns in Massachusetts under wholesale competition and the transmission open access provisions contained in FERC's Order 888.[159] Municipal tax issues are addressed in the following section

Existing Municipal Light Systems

Pursuant to the General Laws of Massachusetts, any town or city has the right to establish a municipal light system.[160] Once established, that entity has the same franchise rights and privilege as any other utility. Municipal utilities in Massachusetts differ from privately-owned utilities in the state in that their rates are set by the local government rather than the DPU. The DPU has limited authority over some aspects of the system. Its jurisdiction includes: approving issuance of revenue bonds, insuring statutes are followed concerning street lighting rates, reviewing permissible earnings allowed under statute, and insuring rates are not change more than every three months.[161] Other factors related to financing, taxes and similar matters also distinguish municipal utilities from privately-owned ones.

In 1996 there were forty municipally-owned systems in Massachusetts. They are Ashburnham, Belmont, Boxboro, Boylston, Braintree, Chester, Chicopee, Concord, Danvers, Georgetown, Gorton, Groveland, Hingham, Holden, Holyoke, Hudson (also serves Stow) , Hull, Ipswich, Littleton, Mansfield, Marblehead, Merrimac, Middelborough (also serves Lakeville), Middleton, North Attleboro, Norwood, Paxton, Peabody, Princeton, Reading (also serves Lynnfield Center, North Reading, and Wilimington), Rowley, Russell, Shrewsbury, South Hadley, Sterling, Taunton (serves North Dighton, Raynham and Berkely), Templeton (also serves Baldwinville, Templeton Center, East Templeton, and Otter River), Wakefield, West Boylston, and Westfield. Although a quarter produce some of their supply from their own facilities, all purchase power from investor-owned utilities, independent power producers, or similar suppliers. In 1995, twenty-seven municipal companies purchased a percentage of their power through the Massachusetts Municipal Wholesale Electric Cooperative (MMWEC).[162]

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[159] 61 Fed. Reg. 21,540 (1996)

[160] G.L. c. 164 §34 et seq.

[161] GL. c. 164 §§ 58 - 59

In Order 888, the FERC recognized that it did not have authority to order municipally-owned utilities to file open access tariffs and to comply with other provisions of the Rule.[163] The FERC expressed concern that this could result in a patchwork of open and closed electric systems. To mitigate a potentially adverse result, Order 888 contains a condition of "reciprocity" that requires publicly-owned facilities that own, operate or control transmission facilities and receive wholesale transmission service under an open access tariff to offer reciprocal open access to the transmission provider.[164] Because of its limited authority over municipally-owned systems, the DPU has taken a similar approach to that of FERC in its proposal to introduce retail competition.[165] The DPU's *Model Rules* state that municipalities who desire to expand their service territory must allow competing suppliers into their own.[166] In this case, there would be limited application of the reciprocity rule if municipalities don't find it to their benefit to expand their service territory [and provide service] outside their political boundaries. Even if few opportunities exist to apply the reciprocity provision, the same forces which are pushing the opening of private franchises to retail competition are likely to propel municipal companies to voluntarily introduce retail competition[167] In either case, there is no guarantee that all municipalities operating their own systems will be open for retail competition.

- The legislature will need to make a determination on whether the service territories of municipal systems should be opened to retail access. It will have to weigh the potential benefits and losses of implementing state-wide retail competition. The average rates charged by municipal companies are, on average, less than those charged by the investor-owned utilities. However, maintaining the status quo may prevent the captive customers from enjoying potentially lower rates. If the legislature determines that all consumers should have the option to participate in a competitive retail market, it will find it necessary to amend the statute in a manner which removes the guarantee to municipal light companies of sole access to their citizens. Of course, as with investor-owned utilities, a period of transition and recovery of stranded costs be incorporated to any proposal.

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[162] Massachusetts Municipal Wholesale Electric Cooperative, brochure (1992).

[163] 61 Fed. Reg. 21,614 (1996)

[164] 61 Fed. Reg. 21, 613 (1996) It should also be noted, that in anticipation of publicly-owned companies participated in electricity markets beyond their political boundaries, the IRS is revising the tax exempt status of municipal light companies.

[165] Given that the DPU does not have jurisdiction over municipal rates, the DPU cannot directly mandate that existing municipal systems introduce retail competition within their service territories.

[166] D.P. U. 96-100 *Model Rules and Legislative Proposal*, p. 206-207

[167] Some municipal companies can successfully compete with other utilities. For example, the town of Littletown, MA won a competitive bid to operate a distribution system in a new commercial center, beating out Boston Edison and Massachusetts Electric.

Although the electricity market in Massachusetts has been dominated by investor-owned utilities, municipalities have long been able to establish electric companies.[168] Despite this allowance, relatively few communities have chosen this route. The potential gains, such as lower cost power and increased local control, were rarely seen as greater than the potential disadvantages such as liability and capital cost issues. However, the passage of the EPAct and subsequent actions taken by FERC heightened expectations that more municipalities would consider setting up their own distribution companies or aggregator. Wholesale competition means that communities may find lower prices than what they are currently paying, and open access on the transmission system will allow that supply to reach large customers or groups of customers. That being said, there has been some activity concerning municipalization, but not nearly at the level many anticipated. Nevertheless, citizens may find it to their benefit to consider what their options are as a community.

The section will outline in brief fashion three options to provide consumers, in the relative short term, with potentially lower cost options than are available from the vertically -integrated utilities that have served them historically. These could be employed by municipalities in Massachusetts who do not wish to be captive to their incumbent utilities. The three options are:

- Creation of a municipal utility in each municipality or a consortium of cities and towns;
- Creation of a municipal load aggregator that buys bulk power wholesale and redistributes the power for sale to those living or doing business within its boundaries and;
- Franchise competition.

It should be noted that there is a major caveat to the assumption that wholesale contracts for cities and towns will produce rates that are lower than the current retail rates, namely the value of the stranded assets the utility is allowed to recover. In Order 888, the FERC set out is policy for municipalities who become purchasers of wholesale power (municipalization), it states "this Commission should be the primary forum for addressing the recovery of stranded costs caused by retail-turned-wholesale customers," preempting DPU action on such a matter.[169] However, the Order also states that stranded costs resulting from a newly formed wholesale power sales customer who ceases to purchase power from the incumbent

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The Electricity Daily, "Penn: Munis Shouldn't Fear Competition," October 16, 1996, p.1 Or, in some cases, these pressures may drive the municipality to sell some or allof its utility to a private or other public company.

[168] Mass G.L.c. 164§ 34

[169] 61 Fed. Reg. 21,646 (1996). The Rule states that if a retail -turned-wholesale customer is able to reach a new generation supplier under an open access tariff or pursuant to an order under Section 211, "any costs stranded as a result of this wholesale transmission access should be viewed as wholesale stranded costs subject to the authority of the Commission." Commissioners Massey and Heocker dissented on this point and argued that decisions on stranded cost recovery instances of retail-turned-wholesale situations should be left to the states. 61 Fed. Reg. 21,735 and 61 Fed. Reg. 21,736 (1996)

utility and does not use that utility's transmission system to access new supply, does not fall under FERC's jurisdiction.[170] The jurisdictional issues associated with this provision are not yet resolved as many state commissions argue that stranded costs associated with this activity fall under their authority. Nevertheless, the stranded asset issue must be a factor in a municipality's decision-making process. [171]

Creation of a New Municipal Utility - Municipal Light Plants

As described above, any city or town has the right to establish a municipally-owned and operated electric utility.[172] Although cities and towns have had the option to form municipal electric systems, may not have because building their own facilities was prohibitively expensive and access to alternative power sources was restricted as incumbent utilities could deny access to transmission facilities. Under the EPAct, all utilities, including municipally-owned systems, may seek an order from FERC which requires the utility to wheel power through their transmission system.[173] Municipal utilities have an opportunity to buy and sell every day, both on a long term and short-term basis, at prices less than those paid by their individual residents/retail customers. Alternatively, a city could build or buy its own generating plants or buy from independent power producers who may or may not be affiliated with a utility.[174]

If the municipality decided not to self generate, it would control and own only the distribution wires. The American Public Power Association sees three advantages to local public ownership of a distribution utility: owning the asset and thus having control over yield on future revenues and benefits, control, and options; local decision-making; and lower prices.[175] A municipal utility would either purchase the existing distribution system from the incumbent utility, or if the terms could not be agreed upon, then the municipality would build its own distribution system.[176] Such duplicate systems could be established in either a part of the city or throughout depending on the judgement of the local government. As it is currently written, Massachusetts law stipulates that once a city or town votes to acquire a municipal light plant every consumer of electricity in that town or city must purchase from the municipal light plant until it is sold.[177] However, if the law were changed and citizens allowed to choose their supplier, the municipal utility would probably be ultimately engaged in head-to-head competition with the existing utility on a house-to-house basis.

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[170] 61 Fed. Reg. 21,646, fn 718 (1996)

[171] For an expanded discussinon of tstranded cost issues see Section VII.

[172] Mass. G.L.c 164§ 34 authorizes cities and towns to own and operate municipal light plants.

[173] Public Law 102-486

[174] Section 35 of the Mass. G.L. c.164 authorizes a town to acquire a light plant by two- thirds town meeting vote.

[175] David W. Penn, "The Value of A Public Power Distribution System: Increasing, Not Decreasing," American Public Power Association , Washington, DC: October, 1996) p.13-15.

[176] Section 42 of G.L. c 164 authorizes a town to purchase the generation and distribution facilities of any existing provider of electricity.

Whether a city was able to buy the distribution assets or not from an incumbent utility (even if the utility was willing to sell, the problems associated with arriving at a mutually acceptable sale price cannot be underestimated) or had to build a system from scratch, a city would have to be prepared to make a significant capital investment - the cost of which it would have to factor into the rates that it ultimately passed on to its citizens. A city would also have to cope with the loss of tax revenue that it had derived from the utility on its property. Again, that loss of tax revenue could be a factor in establishing the rates a city would charge its customers. The potential compensating factors for incurring these expenses, of course, are that the bulk of electric rates are embedded in the cost of producing or procuring power (approximately 75-80% on average), and not in the cost of transmitting and distributing it. Given that the marginal cost of buying power in a competitive market on either a firm or non-firm basis is likely to be less expensive than the self-distribution investment is could result in lower rates. It goes without saying, however, that a city undertaking such an endeavor would also have to invest considerable resources assembling a competent team of personnel to manage the business.

The caveat on all of this is, of course, the question of who will pay those costs incurred by the incumbent utility in planning, as it was legally obligated to serve the load in a city that now chooses to depart its system. If a city choose to establish its own utility in the wholesale market and purchase power in the wholesale market, then those transactions would be subject to the jurisdiction of FERC. Similarly, FERC has jurisdiction over the transmission wires that will be used to carry purchased power to a city's distribution system. FERC has enunciated a policy of allowing utilities to recover those revenues associated with verifiable, non-avoidable, unmitigated costs that were prudently incurred by an incumbent utility in order to meet its legal obligation to serve the load in the departing city if some portion of those revenues were lost as a result of the change to a municipal system.[178] Recovery of those costs could well eliminate much, if not all, of the benefits of establishing the municipal system. On the other hand, enunciating the policy is likely to be far simpler for FERC than deciding the actual cases involving stranded assets that come before the Commission. The standards enunciated - "verifiable," "non-avoidable," "unmitigated," and "prudently incurred" - are vague and are likely to be the subject of a great deal of litigation, or at least provide a departing city with ample room to try negotiating an "exit fee."

In summary, the establishment of a municipal electric utility has the benefits of providing a city with direct access to the transmission grid with its supplies of competitively priced bulk power to purchase

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[177] G.L. c. 164 § 34 et seq.

[178] However, when a municipality determines that it wishes to become part of another municipality's existing system (through annexation) FERC will not be the primary forum because , "in these situations there is no direct nexus between the FERC-jurisdctional transmission access requirement and the exposure to non-recovery of prudently incurred costs. The risk of an existing municipal utility expanding its territory was a risk prior to the EPAct and prior to any open access requirement." 61 Fed. Reg. 21,646 (1996)

for its customers, allowing the key retail business, policy, and regulatory issues to be decided locally by politically accountable people, and providing a good strategic positioning for the competitive electric market that is rapidly emerging. The potential downsides are the heavy capital investment that a city will be required to make, the uncertainty over the stranded asset issue, the undertaking of management and market risks by a city, and the potential divisiveness engendered by the debate over what to do.

Creation of a Municipal Aggregator

Under this option, municipalities would aggregate their electricity demand to buy bulk power from a wholesale supplier in order to capture the economies of scale for residents. It would not take ownership of generation, transmission or distribution facilities. As a buyer of electricity for street and school lighting and municipal offices. A municipality has bargaining leverage it can use with suppliers to negotiate rates for their residents. Towns, cities, or any group of these would have an "aggregator" to negotiate electricity prices and services for them from suppliers. The negotiated rates would be regulated by respective local governments while the rates charged for distribution would fall under DPU authority as the incumbent utility would probably continue to provide distribution services. Communities in Massachusetts are currently prohibited from aggregating their load because electric utilities operate exclusive franchise territories. As noted above, municipalities are granted an exemption from this rule if they wish to establish and own their own electric utility.

On the upside, buying at the wholesale level may increase customers' choices and enhance their bargaining power. In many cases, it is probable that using an aggregator to negotiate rates for groups of customers would result in lower electricity bills. The aggregator's task will be to bring lower bulk rates and guaranteed service to customers through negotiation with various electricity suppliers. The aggregator's job could be an in-house position or an external consulting contract with the municipality. A fee will be charged for the aggregator's services (although the true costs may be hidden if the aggregator's job is within local government structure and subsidized), however, savings made through rate negotiations might cover these costs. This could be guaranteed if the municipality contracted the aggregator on a contingency basis. The aggregation service could be either voluntary or mandatory for residents.[179]

There are several concerns related to the long-term gains of aggregation that a city has to consider. First, a city would inherit the risks of doing business in the competitive electricity market. While municipal aggregation may protect residents in the short run, it could cost them in the long run, if losses were transferred to taxpayers. Similarly, a portion of a city's tax revenues could be lost if the contract negotiated

by the aggregator is awarded to a new supplier, which might leave the current supplier with unrecoverable, financially dilapidating stranded investment costs (described above). These losses might be mitigated if the incumbent utility was kept as the distribution company. Finally, if the role of load aggregator was internalized in the city government (rather than contracted out), the community would inherent all the responsibilities of maintaining this business (recruiting customers, billing, debt collection, litigation etc.). In addition, the appointment of an aggregator could politicize a job which is best done on a commercial basis. There are a number of aggregators and power marketers already in existence. The consumer could benefit more if these companies had to compete for their services. Each of these risks could be reduced if load aggregator services were obtained under a type of performance-based contract. Overall, the risks associated with aggregation are of a smaller magnitude than those linked with municipalization, since the municipality bears far less investment risk. Also, aggregation may result on less risk than continuing to be subject to monopoly service by a high cost utility.

Recognizing the potential advantages of load aggregation, the Barnstable County Commissioners and the Town of Lexington have expressed a strong interest in aggregation for their communities. In addition, the DPU approved two retail aggregation pilot programs offered by New England Electric Systems (NEES) in 1996. One pilot program involves load aggregation of thirteen industrial customers. the second pilot allows the an impartial party to act as an administrator to solicit bids for 100 million kilowatt hours per year to serve residential rate payers in the cities of Lawrence, Lynn, Northampton and Worcester. The program is voluntary and customers, may return to Mass Electric (a NEES subsidiary) at any time. Mass Electric will deliver the power, provide conservation services, billing, metering and repair services to participants. The DPU's order requires that the programs cause no harm to non-participants and that NEES file a distribution tariff, for the services provided by Mass Electric, with the FERC. Under a retail wheeling pilot program in New Hampshire, which began in the summer of 1996, competitors will have access to 3% of each utility's' peak load, which will be allocated proportionately amongst all classes of customers.

Creation of A Competitive Franchise

Under this option a city, or town, or group of these, would issue a request for proposals for electricity service for a limited period of time and choose a single supplier or multiple suppliers from the bids received. The municipality would control some policies, as bids accepted for electric service must include provisions for forecasting, demand side and resource management, environmental protection, and low-income service and rates. The current service provider could win the bid, and thus, no facilities would be transferred. If a new service provider won the bid, one of the following could occur: old service provider leases facilities to new service provider; an arbitrated buy-out or acquisition of the facilities used

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[179] The Office of the Attorney General and the DPU have expressed concerns with making residents' participation in a municipal

by the new service provider, or municipal acquisition of the facilities - the municipality would then lease the facilities to the new service provider. As with municipal aggregation, Massachusetts law currently prohibits a city from negotiating a franchise agreement for retail service with a non-incumbent utility. Many of the concerns such as stranded cost recovery and tax losses addressed in the previous two sections can be applied to this option, such as stranded asset costs and loss of tax base if the contract is awarded to a new supplier.

Nearly half of all states currently permit local governments to establish such franchises. The cities of Denver, Houston, Miami, San Diego, and Chicago receive electricity service under through competitive franchising. However, these cities have awarded bids to monopoly suppliers and signed long term contracts (30 to 40 years). These municipalities do not conduct frequent competitive bid processes. Although competitive franchising has not, in practice, been applied very often, some states have initiated several studies and proposals which evaluate competitive franchising. While by no means exhaustive, the list below offers a sample of these activities:

Massachusetts[180]

Barnstable County has a $62,500 grant from the Department of Energy to study competitive franchising at the local level. The study will help determine if the proposition is a good one for towns across the state.

LasCruces, New Mexico

On August 20, 1994 the city of Las Cruces voted 2-1 to establish a new municipal utility to displace its current distributor and supplier, El Paso Electric Co. Southwestern Public Service Co. was selected as the wholesale power supplier. Under the city's oversight, Southwestern will provide local operation and maintenance.

California

In the fall of 1994 the organization Toward Rate Utility Normalization (TURN), announced a plan to create a "Consumer Owned Utility" (COU). The COU would be created by local municipal agencies. Unlike municipal utilities (described above), the COU would not own the transmission and distribution facilities, but would lease them from the existing provider. The COU would negotiate and purchase power suppliers on the wholesale market, as well as perform all operations of the system from metering to planning.

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aggregation scheme mandatory and suggest they should be voluntary. DPU 96-100 *Model Rules and Legislative Proposal*, p.213

[180] In its *Model Rules and Legislative Proposal*, the DPU stated that it " does not support the concept of competitive franchise because it would infringe upon electric distribution company franchisesby opening the franchise [distribution services] to competition .... Our goal in this proceeding is to open the generation sector [only]." see DPU 96-100 *Model Rules and Legislative Proposal* at fn 156.

New Hampshire

In June of 1995, the Public Utilities Commission ruled (in the Freedom Electric Power order) that electric utility service territories granted under state law to Public Service New Hampshire, was not exclusive on a permanent basis, that the state favored competition, that the franchise could be amended to allow public utility competitors under Commission regulation to serve retail customers in another utility's service are, and that such an amendment of the franchise would not involve a takings.[181] The PUC acknowledged that the franchise had been characterized as exclusive in the past, but asserted that in fact, it never was. This action opened up the possibility of competitive franchising in New Hampshire.

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[181] New Hampshire Public Utilities Commission, Docket DE-94-163, decision of May 31, 1995.

XI. State and Local Tax Issues[182]

States use a variety of methods to tax electric utilities and end-use electricity consumption. Taxes on investor-owned electric companies include franchise taxes, gross receipt taxes, regulatory assessments, and property taxes. These were designed to tax vertically-integrated utilities under cost-of-service regulation. The introduction of market-based pricing to the electricity industry is likely to diminish the applicability and fairness of these tax policies. Thus, reforming the relevant tax laws is an essential part of establishing a fair, competitive market environment. This chapter reviews the specific taxes currently applied to utilities and consumers, discusses the potential problems associated with these, and. suggests some tax alternatives for the Commonwealth.

Existing Tax Laws

Sales Tax

In general, most states have not traditionally charged a tax on electricity sales to residential or manufacturing consumers.[183] States provide these exemptions in order to avoid: 1)taxing the poor, who have less efficient energy use; 2) tax pyramiding (taxing goods at multiple stages of production); and 3) energy intensive companies in the region relocating to areas where tax and electricity rates are lower.[184] Massachusetts has 5 percent sales tax on services and goods, including end-use electricity consumption. Exemptions are granted on electricity sales to residential consumers and manufacturers when the electricity is used for production and/or the company has fewer than five employees.[185]

Corporate Franchise Tax[186]

The franchise tax for electric utilities is a 6.5% tax on net income. It is paid by incorporated electric utilities subject to regulation under Massachusetts General Law, Chapter 164. [187] It is also paid by varous other regulated "utility corporations"defined in § 52A. These include gas and telephome companies, railway companies, pipe line companies and others. Non-utility corporations are not subject to the utility excise, but instead pay corporate excise. The franchise tax is paid by utilities is in lieu of the corporate

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[182] In addition to state tax issues there are a number of federal taxes specific to the electric utility industry which are out of the scope of this paper. These include the ability municipal utilities to issue tax-exempt financing bonds. The IRS is currently investigating the tax inplications of wholesale competition on municipally-owned utilities.

[183] Energy Information Administration, *End-Use Taxes: Current EIA Practices*, DOE/EA-0583, (U.S. Government Printing Office, Pittsburgh: August, 1994)

[184] The Alliance to Save Energy, *State and Local Taxation: Energy Policy By Accident* (Washington DC: 1994) p.22

[185] Mass. G.L.c. 64 H§6

[186] Assistance from the Department of Revnue was provided in this section through responses to questions posed by the Joint Committee on Electric Utility Restructuring, March 12, 1997

[187] Mass. G.L.c 63§52A

excise paid by foreign and domestic business corporations and differs from the excise in several respects. These are:

1) Utilities are taxed at 6.5% of net income, while business corporations pay 9.5% of net income.

2) Business corporations also pay an excise based upon the value of their tangible property locatd in Massachusetts or their net worth. [188]Utilities do not pay these non-income excises. but are subject to local taxation at local rates.

3)Utilities doing business inside and outside of Masschusetts use a three-facor apportionment formula in which property, payroll, and sales are equally weighted. Business corporations use a three-factor formula in which sales are doubled or weighted. A different, single sales factor formula is currently being phased-in for manufacturing corporations.

Gross Receipts Tax

A gross receipts tax is a single tax applied to gross revenues from in-state sales. Rather than taxing property, which is difficult to assess, many states levy taxes on the gross receipts of energy utilities. Massachusetts does not impose a gross receipts tax on electric utilities.[189]

Property Tax

Local property taxes on utilities vary widely, but for several towns in Massachusetts they are an important source of revenue. For example, in 1995, the town of Erving received 70% of its total revenue from taxes on Northeast Utilities facilities and the city of Everett 42.5 percent of total revenue came from Boston Edison.

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[188] Mass. G.L. c. 63, §§ 32 (a) (1), 39 (a) (1).

[189] The Alliance to Save Energy, *State and Local Taxation: Energy Policy By Accident*,p.28

Table Six. Estimated Local Taxes 1997

Note:

Community	Generating Unit	Owner	Estimated Current Assessment, 1994 (1)	Estimated Fiscal 97 Tax Rate per $1,000 9@)	Estimated Fiscal 97 Local Tax (1)* (2)
Boston	New Boston 1&2	BECo	$228,137,900	$42.59	$9,716,393
Cambridge	Kendall	Cam Elec	$3,228,577	$35.78	$115,518
Everett	Mystic 4,5,6,7	BECo	$303,312,530	$29.54	$21,000,000†
Erving	Northfield Mtn.	NU	$13,705,773	$22.53	$1,700,000†
Plymouth	Pilgrim	BECo	$733,635,075	$20.22	$14,834,101
Rowe	Bear Swamp	NEP	$54,729,107	$15.15	$829,146
Salem	Salem Harbor 1-4	NEP	$154,573,526	$34.23	$8,800,000‡
Sandwich	Canal 1 & 2	Comm/EUA	$72,130,731	$14.32	$2,000,000
Somerset	Somerset	Montaup	$22,394,000	$27.57	$617,403
Montegue				$20.12	$2,000,000†
Somerset	Brayton 1-4	NEP	$33,473,495	$27.57	$9,193,864
Sub Total			$1,919,320,714		$70,806,425
Other 29 Communities	Other Generators				$20,000,000
Estimated Total					$90,086,425

† Per 3/1/96 Salem News
‡ DPU 96-100 Hearings

Source: Massachusetts Division of Energy Resources

Utilities have traditionally been assessed at a higher rates than other companies. There are several incentives for this. First, electric utilities have franchise service territories and fixed capital investments which essentially make their operations immobile. Thus, if taxes are raised utilities cannot readily threaten to leave town. Second, the demand for electricity is inelastic and customers are captive (at least they have been up until now), so taxes can be more easily passed through to the consumer.[190] Third, the electricity produced from facilities is often sold in other communities, so tax costs can be exported or distributed among a customer base wider than that of the host town. Independent power producers and other non-utility generators usually make negotiated payments in lieu of taxes.[191] In Massachusetts, local tax rates cannot exceed 2.5 percent of cash value unless approved by voters.[192]

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[190] Demand for a good or service is characterized as "inelastic" if demanded is indifferent to price change.

[191] DPU 96-100 Model Rules and Legislative Proposal, p. 218

[192] Property tax credits, on income tax, are given for pollution control and 75 percent of value of electric transmission lines, solar and wind devices (for 20 years); Water electric facilities (construction after 1978); and property of the MBTA.

Utility Regulatory Fees

In order to pay for the administrative costs of regulators, a majority of states impose fees on utilities. In Massachusetts the fee is .25 percent of a utility's gross receipts. The assessment is not to exceed .25 percent of operating revenues plus $50,000 per nuclear power plant plus other miscellaneous assessments for studies, etc. In 1996 utilities paid around 7.5 million dollars in assessments to the DPU Non-utility companies interested in siting a generation facility in Massachusetts must pay an application fee in order to support the services of the Energy Facilities Siting Board. The DPU is authorized to charge a fee of $75,000 for an application to construct a generation facility. Additional fees may be imposed if the construction of other facilities accompany the application.[193]

Manufacturer's Tax Exemption

Under existing law, equipment used by domestic manufacturing companies to produce electricity is exempt from local property taxes.[194] The intention of this statute is to provide a tax break to manufacturers, however, it has been interpreted to also exempt certain cogeneration facilities not directly involved in manufacturing.[195]

Potential Problems[196]

If retail competition is introduced in Massachusetts, state and local government will face two basic issues. First, during the transition to a competitive market, revenues raised from traditional utilities may decrease. Many observers have predicted that the sales revenues and property values of some traditional, vertically-integrated utilities will decline. Second, in the longer term, existing tax laws that have been based on the monopoly franchise system will not apply to the new market structure and its nontraditional market participants. Under the existing system taxes are passed on to consumers through rates. Leaving the tax laws unchanged in a competitive environment may create inequities among market participants and could result in regulated utilities bearing a larger tax burden than their unregulated competitors.

For many local communities, property taxes on utilities are a large source of revenue. As the industry undergoes major restructuring, utilities and communities face the prospect of a precipitous decline in the market value of some facilities, particularly old fossil fuel and nuclear plants. In a more competitive generation market, some of these facilities may be closed. The potential revenue loss is of major concern to

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[193] Mass G.L.c 164§69J½

[194] Mass G.L. c. 63§38C, Mass. G.L. c § 6, c.1 and 42B.

[195] A cogeneration facility owned by James River Co. in Pepperell used this tax exemption..

[196] This section draws heavily from Deloitte & Touche LLP, *Federal State and Local Tax Implications of Electric Utility Restructuring* (The National Counsel on Competition and the Electric Utility Industry: October,1996).

many communities. Existing property assessment practices and taxes also present a structural problem. Investor-owned utilities have often been subject to local tax rates which are different than the assessment for unregulated entities. If new facilities are built by unregulated entities and the corporate structures of vertically-integrated utilities are unbundled, local governments will need to adjust their policies accordingly. In addition, the manufacturer's property exemption is an incentive for developers of new facilities to qualify as a manufacturer in order to avoid property taxation. Legislators may want to consider this and how the loss of property tax revenue can be addressed in order to ease the financial strain the transition to competition may cause.

Three potential problems can be identified with the collection of the utility franchise tax. First, although it is not true in all cases, regulated electric utilities' revenues may decline with the introduction of customer choice. A decline in rates will not necessarily lead to large consumption increases, as demand for electricity will remain, at least in the short term, inelastic.[197] Thus, if the price of electricity drops relative to other goods, revenue will fall, as will taxes collected on that revenue. Second, the disparate tax rules for electric utility versus non-utility generators could cause inequalities in the marketplace. Finally, customer choice may lead consumers to purchase from suppliers other than the incumbent investor-owned utilities. Other suppliers may be tax-exempt suppliers (such as municipal electric companies), and out-of-state suppliers. Under existing law, the state's authority to collect excises from these entities is limited. Out-of-state suppliers wthin the state's jurisdiction pay the corporation excise rather than the utility franchise tax. However, some out-of-state suppliers, such as those without physical facilities or employees within the state may not fall under the state's authority. Similarly, if the sale of energy is treated as a service, rather than tangible personal property, little or no income would be apportioned to Massachusetts, even if the supplier were wtihin the state's jurisdiction.[198] Tax-exempt entities such as municipal electric companies are, of course, not subject to the franchise tax. Thus, if municipal utility companies engage in retail competition outside their political boundaries, their tax-exempt status may be challenged. Corporation laws and associated excises will have to be given careful consideration by policy-makers as they address retail competition issues.

Unbundling the rates within electricity bills will provide a great opportunity to unbundle all components of rates - including taxes. State and local government will need to determine how to balance the need for adequate tax revenues with the need to introduce competitively neutral tax rules. Described below are some general policy options the legislature might consider.

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[197] Demand for a good or service is characterized as "inelastic" if demand is indifferent to price change.

[198] The Department of Revenue, response to questions posed by the Joint Committee on Electric Utility Restructuring, March 12, 1997.

- Authorize a study on the implications of electric utility restructuring on tax revenue. The study should include recommendations for changes in laws on taxes and corporations. The study could be conducted by the legislature's Committee on Taxation, the Department of Revenue, or by contract with a private company. Over the past two years, a number of states, including Ohio, New Jersey and Pennsylvania, have conducted similar studies on this issue.[199]
- Include property tax recovery in the stranded assets charge to all consumers. In the transition, it may be necessary for the state to provide assistance to communities who have come to depend on tax revenues from utility assets. Clearly, the largest problems face those who serve as home to generating facilities. The legislature would have to authorize an assessment study to determine the fair value of funds to be recovered and distributed to these communities. The estimated stranded costs and associated wires charge should be flexible, so that adjustments can be made as the market develops. If these measures are adopted by state government, state and local administrations as well as utilities will have to cooperate to find an equitable means of distributing revenues to various local governments. Questions such as "Who decides how much each town should receive?" and "Should towns who previously earned high revenues from property taxes on utilities receive the same amount under the new scheme?" will have to be addressed.[200]
- Encourage regulated utilities to develop Economic Opportunity Areas in communities where facilities that are likely to be uneconomic in a competitive market are located.[201] Under this scheme, the utility would work with the local community in an effort to develop a project which will qualify for certification by the Economic Assistance Coordinating Council. In return, the utility would receive a 5 percent income tax credit on the property value. This would qualify as a mitigation measure for purposes of stranded cost assessment.
- Mandate all electricity producers be exempt from personal property taxes. In lieu of this, the legislature could mandate that existing (regulated) electric companies, new generating companies and independent

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[199] Pennsylvania Public Utility Commission, *Report and Recommendations to the Governor and General Assembly on Electric Competition*, July 1996; *The New Jersey BPU/Treasury Joint Task Force on Energy Tax Policy Report*,March 28,1996 and; Roy Bahl, *Taxation and Economic Development: A Blueprint for Reform in Ohio* (Columbus: 1996).

[200] For new generation the DPU encourages " voluntary negotiation of binding long-term tax treaties or agreement governing payments in lieu of taxes prior to the siting and construction of these facilities, after which point irrevocable commitments are made and such negotiations have a less voluntary and non-coercive character." For new generation the DPU encourages " voluntary negotiation of binding long-term tax treaties or agreement governing payments in lieu of taxes prior to the siting and construction of these facilities, after which point irrevocable commitments are made and such negotiations have a less voluntary and non-coercive character." DPU 96-100 Model Rules and Legislative Proposal, p.276-283

[201] An economic opportunity area is an area that has been designated by the Economic Assistance Coordinating Council to be a "decadent area" or a "blighted open area" which is detrimental to the sound growth of a community and unlikely to be developed by the ordinary operation of private enterprise. The Economic Opportunity Area Credit is a tax credit equal to 5% of the cost of property purchased for business use within a Certified Project are in an EOA and is available to public utilities. Schedule EOA, 1996 Massachusetts Department of Revenue.

power producers negotiate binding agreements with municipalities.[202] The contracts between communities and developers could include a provision which provides the community with discounted electricity supply from the facility.

- Create a minimum standard for contracts between local communities and developers.
- Treat electricity providers like other businesses. This would entail repealing the utility franchise fee and replacing it with the excise tax on corporations.
- Remove the property tax exemption granted to manufacturing facilities owning generation equipment and who sell a majority of the energy produced rather than use it themselves (energy not consumed on site for manufacturing).
- Remove the generation component of net income from the DPU annual assessment. Transmission and distribution components would continue to be assessed, as these will continue to be regulated. In addition, an annual assessment may continue on owners of nuclear facilities for health and safety inspections (which could be distributed between the DPU and Department of Public Health). Licensing fees could be charged to aggregators, marketers, brokers and the independent system operator to cover additional administrative costs.
- Apply the facilities siting application fee to all developers. Do not exclude those entities who may also own distribution or transmission subsidiaries that pay an annual fee.
- Consider the introduction of end-use taxes to make up for the state's revenue lost from decreasing electricity prices or declining local property values such as one of the following:

1) *Removal of the Sales Tax Exemption for Residential and Manufacturing Customers*: If the goal is to replace property tax revenues charged to electric utilities, this is a direct, simple way to recover these revenues from residential electric consumers. The revenues could be collected by the state and distributed to local communities which host closed or devaluated facilities.
2) *Consumption Tax/Fee on Electricity*: Franchise fees and local taxes (in excess of normal business rates) could be replaced with a straight-forward end-use consumption tax. An end-use consumption tax on electricity, based on use per kilowatt hour, has a number of benefits. First, it provides pricing transparency. This will be an essential to the restructured industry where customers will be allowed, at minimum, their choice of supplier. In accordance with the Massachusetts DPU decision, all utilities are required to unbundle rates into a wires component, an access charge and an energy charge. A "line-item" consumption tax could be part of this unbundled bill. This could be collected by distribution companies for local or state governments. Second, a consumption tax can have positive impact on improving energy efficiency. Because a consumption tax is transparent, it provides an incentive for consumers to use their energy more efficiently. Third, an end-use tax offers policy flexibility to local

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18 The DPU has suggested this. DPU 96-100 *Model Rules and Legislative Proposal*, p. 215

and state officials. For example, low income customers could be taxed at a lower rate. Finally, it could assist state and local government attempts to "recapture" revenues which will flow out-of-state as utilities seek cheaper power supply opportunities (in a wholesale competitive market) outside the state rather than generating supply in-state at existing facilities. Currently, nine states (AL, AK, CA, ID, MD, MT, ND,SC, and WV) impose a kWh taxes on some or all electricity consumption.[203]

3) *A Btu Tax On All Energy Sources* : This would be an end-use charge on all energy production based on the heat content of fuels. All fuels (including gasoline and aviation fuels as well as home heating fuels) and electricity consumption would be charged. This could have several benefits: 1) it would be fuel blind as it would apply to all fuels (if natural gas use replaces electricity, the state would still recover revenues); 2) the Btu tax would assist in reducing pollution associated with energy use (often touted as a way to change energy consumption behavior and reduce demand); and 3) it could represent a large source of revenue for the state, even if it were a small rate.

4) Sales Tax on All Residential Energy Use - Similar to a Btu tax, a sales tax on all energy use would be fuel blind. An all energy sales tax would apply to all fuel sales to the residential sector including heating fuels, piped and bottled gas, and electricity.

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[203] Alliance to Save Energy, *Energy Policy By Accident*, p. 47-51

XII. Restructuring Regulation

Although the electricity industry is developing into to a competitive market structure, regulation at the state level will not cease to exists, instead it will evolve. This is true for two reasons. First, competitive markets are not perfect, and oversight of market operations and market participants will be necessary. The primary issues of concern are the exercise of market power, antitrust behavior, and quality of service.

Second, the distribution and transmission functions, at least in the short-term, of the electricity system will remain regulated monopolies.[204] The traditional cost-of-service/rate-of-return regulation, where regulators determined rates on a utility's reported costs and an approved rate-of-return for investors, is being replaced by incentive regulation in a number of jurisdictions.[205] Although the calculations for conventional rate-of return where easily performed, there are,

> serious problems associated with information, implementation and incentives. Rate-of-return regulation requires regulators to ascertain demand and costs and to set prices so that investors can earn an appropriate rate of return on the money they have tied up in regulated companies. This is not an easy task.[206]

The goal of incentive regulation, commonly referred to as performance-based rate making (PBR), to provide incentives for utilities to act more efficiently. revenue cap, price cap, or yardstic/benchmark plans.

> Price cap plans cap weighted average prices of pre-defined groups or market baskets of service. Revenue cap plans cap some or all of a utility's authorized revenues and the utility is required to return to rate payers any revenues in excess of the cap.[207]

In benchmark regulation, a firm's rates are based on the costs of comparable firms. PBR is in use in other industries such as telecommunications and gas, as well as in electricity in several states and other countries. In its Model Rules and Regulations, the DPU stated that it will implement a price cap plan to regulate the parts of the electricity industry not yet subject to competition.[208] The DPU currently applies price cap regulation for some telephone and gas utilities.

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[204] As discussed in Section VI the distribution function could be limited to wires services, or may also include other energy service (including the standard offer, default service, conservation programs, etc.). This will depend on the level of unbundling in the retail market.

[205] The rate of return establsihed as fair and reasonble by a commission is hte return that a utility may earn on its rate base- net investment in plant, equipment, and working capital. A utility company is not guaranteed a specific rate of return be a commission , but it is given an opportunity to earn a rate of return which is determined appropriate. The authrorized rate-of return varies by company. The most recently approved rate of return on rate base was 10.49% to Commonwealth Electric in 1991, o n common equity it was 11% granted to Cambridge Electric Co. NARUC, *Compilitiation of Utility Regulatory Policy 1994-1995* (Washington, DC: 1995) p.519-523

[206] Brennan et al. *A Shock to the System*, p.67

[207] G. Alan Comnes, Steven Stoft, Nathanael Greene, and Larry Hill, "Six Useful Observations for Designers of PBR Plans," *The Electricity Journal*, April, 1996, p. 16

[208] DPU 96-100 *Model Rules and Legislative Proposal*, p. 115-116

Options for the Legislature to Consider

In addition to altering the regulatory framework for the residual monopolies , other aspects of the regulatory environment will need to change. As the first point stresses, the competitive market will require oversight, this will demand new tools and skills. Similarly, the structure of regulatory agencies may need to adjust in order to reflect the change from regulation to competition. In Massachusetts, the legislature might consider the following:

- During the transition to a competitive market, the legislature might consider providing the DPU with the necessary funds to hire experts on asset valuation and other areas related to stranded costs as needed.
- The DPU could be required to file a short report on what it will require to address issues associated with a competitive electricity market. The report should include an analysis of the staffing needs and institutional changes (such as reorganizing the DPU divisions according to functions (consumer protection, rate regulation, antitrust, etc.) rather than sectors (gas, electricity, telecommunications, etc.). Based on the recommendations of the report, the legislature may encourage the DPU to retain experts in the areas of antitrust (mergers and market power) and consumer relations. This may be accomplished by providing adequate funds to the DPU, either through assessments, fees on market participants or from the General Fund.
- Implement changes the Energy Facilities Siting Board which reflect the characteristics of the competitive generation market.
- Recognizing the importance of regional aspects of energy markets, the legislature might authorize, when necessary, the DPU's participation in regional forums. For example, the development of and regional transmission system operator may require an interstate compact or other interstate agreement.

ATTACHMENT I. Electric Generating Units Physically Located in Massachusetts
Plants Owned by Electric Utilities

Plant Name	Location	Nameplate Capacity (MW)	Primary (Secondary) Fuel	Year Constructed	Last Unit Installed	Total Units	Company
Brayton Point	Somerset	1600.2	Coal (Oil)	1963	1973	4	NEP
Canal	Sandwich	1072.1	Oil	1968	1976	2	Canal Electric
Salem Harbor	Salem	805.3	Coal (Oil)	1952	1972	4	NEP
New Boston	S. Boston	717.7	FO2 (Gas)	1965	1967	2	BECo
Mystic No. 7	Everett	617.0	Oil (Gas)	1973	1975	1	BECo
Mystic Nos. 4,5,6	Everett	468.8	Oil	1957	1961	3	BECo
W. Springfield	W. Springfield	113.6	Oil (Gas)	1949	1957	1	NU
Somerset	Somerset	194.0	Coal (Oil)	1925	1959	2	Montaup
Mount Tom	Holyoke	136.0	Coal	1960	1960	1	Holyoke Water (NU)
Cleary	Taunton	28.3	Oil	1966	1966	1	City of Taunton
Kendall	Cambridge	67.5	Oil (Gas)	1949	1958	3	Cambridge Electric
Cannon Street	New Bedford	63.1	Oil (Gas)	1916	1950	2	ComEd
Cabot	Holyoke	24.8	Oil (Gas)	19441	1955	3	City of Holyoke
Blackstone Street	Cambridge	18.5	Oil (Gas)	1903	1950	3	Cambridge Electric
Total Fossil Station		5926.9				32	
Stony Brook	Ludlow	360.0	Oil (Gas)	1981	1981	4	MMWEC
Cleary	Taunton	118.0	Gas (Oil)	1966	1976	2	City of Tauton
Potter	Braintree	96.0	Gas (Oil)	1959	1977	2	Town of Braintree
Nantucket	Nantucket	7.4	Oil	1948	1988	2	Nantucket Electric
Total Combined Cycle		581.4				10	
Pilgrim	Plymouth	678.0	Uranium	1972	1972	1	BECo
Northfield Moutain	Irving	846.0	Water	1972	1973	4	WMECo
Bear Swamp	Rowe	600.0	Water	1974	1974	2	NEP
Cabot	Montague	51.0	Water	1915	1917	6	WMECo
Cobble Mountain	Granville	33.0	Water	1930	1930	3	WMECo
Hadley Falls	Holyoke	30.8	Water	1952	1983	2	Holyoke Water (NU)
Deerfield No. 5	Florida	17.6	Water	1915	1974	1	NEP
All Under 15 Mw		69.8	Water			46	Holyoke Water (13mw) NEP(11-32.9 mw) WMECo(8-21.2 mw) City of Holyoke(4-2.6) mw)
Total Water		1648.2				64	

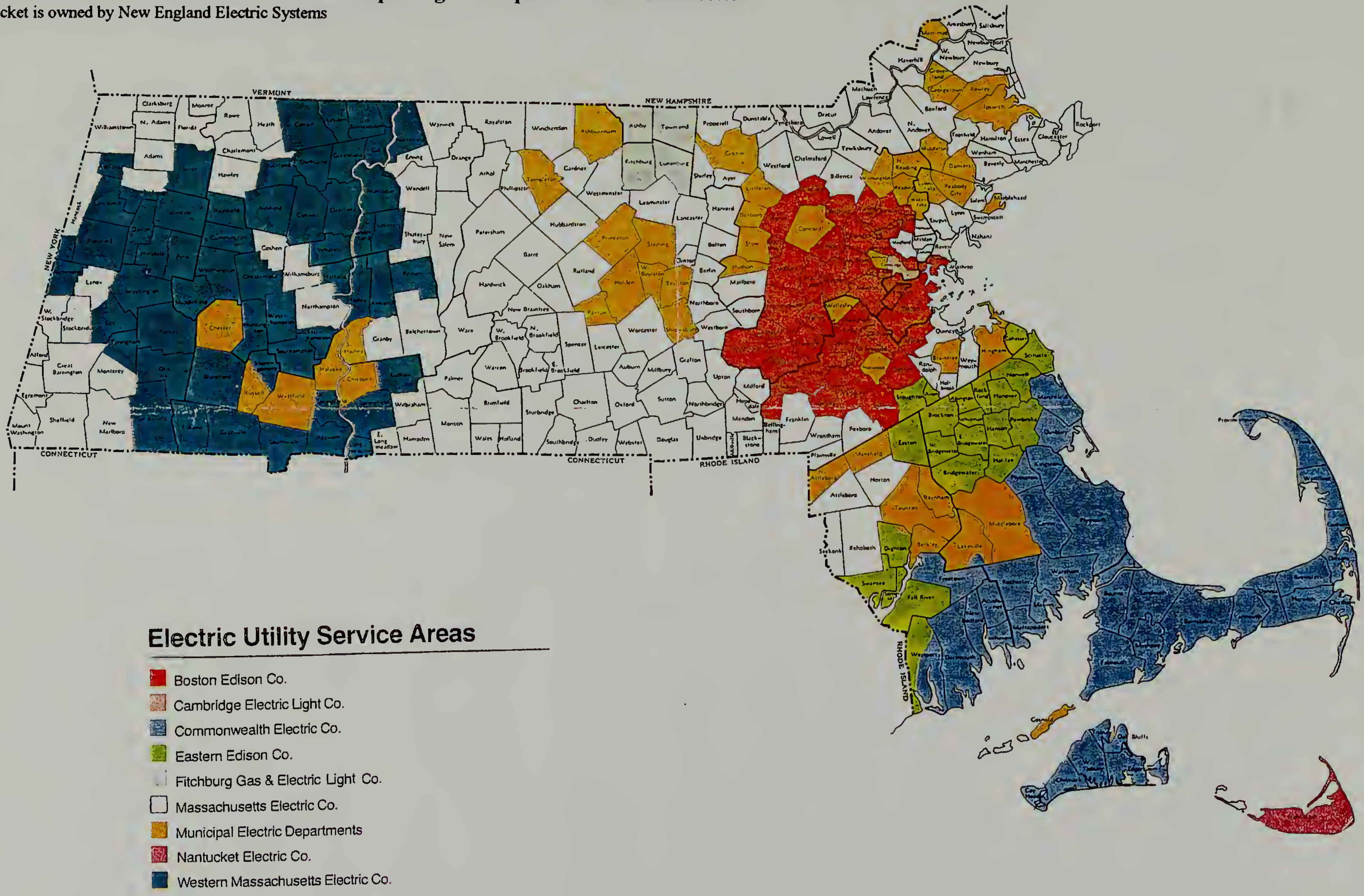
Existing Non-Utility Generation Facilities in Massachusetts

Plant Name	Location	Purchasing Entity	Fuel	Nameplate Capacity	On-Line Date
A+ D Water ‡	Acton	BECO	Water	0.18	1994
MDC Wachusett Dam	Clinton	BECO	Water	1.10	1971
Boot Mills Hydro Inc.	Lowell	CES	Water	20.00	1985
Chicopee Hydro (Swift River)	Chicopee	CES	Water	2.20	1985
Collins Hydro (Swift River)	N. Wilbraham	CES	Water	1.20	1984
Ware Hyrdo (Pioneer)	Ware	CES	Water	1.20	1984
Ware Hydro (Pioneer)*	Ware	CES	Water	1.20	1996
Ware Water (Pioneer)*	Ware	CES	Water	1.20	1996
Linweave	Holyoke	FGE	Water	2.84	1982
Centennial Island Water	Lowell	MMWEC	Water	0.20	1990
Crescent Dam	Russell	MMWEC	Water	N/L	1993
Dudley Water	Dudley	MMWEC	Water	0.10	1987
Glendale Water	Stockbridge	MMWEC	Water	0.38	1989
Methuen Water	Methuen	MMWEC	Water	0.08	1988
Oakdale Water	West Boylston	MMWEC	Water	3.00	1994
Orange Water #1	Orange	MMWEC	Water	0.35	1987
Orange Water #2	Orange	MMWEC	Water	0.35	1993
Powder Hill Water	Barre	MMWEC	Water	0.13	1990
South Barre Water	Barre	MMWEC	Water	0.15	1989
Webster Water	Webster	MMWEC	Water	0.15	1983
Lawrence Water	Lawrence	NEP	Water	16.80	1981
L'Energia	Lowell	BECO	Gas (Oil)	59.00	1993
MassPower(Monsanto)	Springfiled	BECO	Gas (Oil)	100.00	1993
Northeast Energy Assoc. 1&2	Bellingham	BECO	Gas (Oil)	248.30	1991
Altresco	Pittsfield	CES	Gas (Oil)	N/L	1993
Dartmouth Power Assoc.	Dartmouth	CES	Gas (Oil)	67.60	1992
Mass Power 1	Springfield	CES	Gas (Oil)	25.00	1993
Mass Power 2	Springfiled	CES	Gas (Oil)	25.00	1993
Northeast Energy Assoc. 1&2	Bellingham	CES	Gas (Oil)	46.00	1991
Semass	Rochester	CES	Refuse	46.20	1998
Semass Expan #2	Rochester	CES	Refuse	22.50	1993
APLP Elec Gen Fac (BFI)	Chicopee	CMLP	Methane	N/L	1993
Mass Power (Monsanto)	Springfield	EUA	Gas	12.69	1996
Northeast Energy Assoc. 1&2	Bellingham	EUA	Gas ()il)	25.00	1991
Pine Tree	Fitchburg	FGE	Waste coal	17.00	1992
MRA*	Fitchburg	FGE	Oil	N/L	1996
Carbalon	Sterling	MMWEC	Oil	0.33	1992
L'Energia	Lowell	MMWEC	Gas	6.06	1993
Mass Power (Monsanto)	Springfield	MMWEC	Gas ()il)	17.69	1993
Refuse Fuel Assoc.	Lawrence	MMWEC	Refuse	10.00	1986
Altresco	Pittsfield	NEP	Gas	165.00	1990
Clark University	Worcester	NEP	Oil	1.45	1989
L'Energia	Lowell	NEP	Gas	83.00	1993
Mass Refuse Tech (Neswc-Resco)	North Andover	NEP	Refuse	32.23	1985
Ogden Martin	Haverill	NEP	Refuse	42.87	1989
Refuse Energy Co. (Saugus 1)	Saugus	NEP	Refuse	29.00	1985
Wheelabrator Millbury Inc.	Millbury	NEP	Refuse	40.10	1987
General Electric (Lynn)‡	Lynn	NEP	Oil	55.00	1992
Mass Power (Monsanto)	Springfield	NU	Gas (Oil)	54.00	1993
Springfield Res Recovery Project	Agawam	NU	Refuse (Oil)	6.00	1988
Agawam Turboexpander (Bay State Gas)	Agawam	UNITIL	Other*	1.84	1989
Indeck	Turners Falls	UNITIL	Coal	17.41	1989

Source: New England Power and Planning, *NEPOOL Forecast Report of Capacity, Energy Loads, and Transmission 1995-2011*, April 1, 1996 † This table does not include non-utility generation facilities which are not claimed for capacity. This generation typically serves on-site customer load only. ‡ Utility does not claim capacity, but purchased power from enitity to serve end-use customers. * Nominal amount of gas used for production.

ATTACHMENT II. Electric Utilities and Municipal Light Companies in Massachusetts

Note: Nantucket is owned by New England Electric Systems


VERMONT
NEW HAMPSHIRE
NEW YORK
CONNECTICUT
CONNECTICUT
RHODE ISLAND
RHODE ISLAND
Electric Utility Service Areas
🟥 Boston Edison Co.
▨ Cambridge Electric Light Co.
▨ Commonwealth Electric Co.
🟩 Eastern Edison Co.
▫ Fitchburg Gas & Electric Light Co.
☐ Massachusetts Electric Co.
🟧 Municipal Electric Departments
▨ Nantucket Electric Co.
🟦 Western Massachusetts Electric Co.

GLOSSARY

Acid rain: Also called acid precipitation or acid deposition, acid rain is precipitation containing harmful amounts of nitric and sulfuric acids formed primarily by nitrogen oxides and sulfur oxides released into the atmosphere when fossil fuels are burned. It can be wet precipitation (rain, snow, or fog) or dry precipitation (absorbed gaseous and particulate matter, aerosol particles or dust). Acid rain has a pH below 5.6. Normal rain has a pH of about 5.6, which is slightly acidic. The term pH is a measure of acidity of alkalinity and ranges from 0 to 14. A pH measurement of 7 is regarded as neutral. Measurements below 7 indicate increased activity, while those above indicate increased alkalinity.

Aggregation: 1.) Forming a large (or aggregate) group of consumers who together can bargain for the lowest possible electric rates; 2.)The process of estimating demand and scheduling deliveries of power to a group of customers.

Average revenue per kilowatt-hour: The average revenue per kilowatt-hour of electricity sold by sector (residential, commercial, industrial, or other) and geographic area (state, census division, and national), is calculated by dividing the total monthly revenue by the corresponding total monthly sales for each sector and geographic area.

Avoided cost: A utility company's production or transmission cost avoided by conservation or purchasing from another source rather than by building a new generation facility.

Baseload: The minimum amount of electric power delivered or required over a given period of time at a steady rate.

Baseload Capacity: The generating equipment normally operated to serve loads on an around-the clock basis.

Baseload plant: A plant, usually housing high-efficiency steam-electric units, which is normally operated to take all or part of the minimum load of a system, and which consequently produces electricity at an essentially constant rate and runs continuously. These units are operated to maximize system mechanical and thermal efficiency and minimize system operating costs.

Btu (British Thermal Unit): A standard unit for measuring the quantity of heat energy equal to the quantity of heat required to raise the temperature of 1 pound of water by 1 degree Fahrenheit.

Bundling: Combining the costs of generation, transmission, and distribution and other services into a single rate charged to the retail customer.

Capacity: The amount of electric power delivered or required for which a generator, turbine, transformer, transmission circuit, station, or system is rated by the manufacturer.

Cogeneration: The simultaneous production of power and thermal energy (e.g. burning natural gas to produce electricity and using the heat produced to create steam for industrial use).

Cogenerator: A generating facility that produces electricity and another form of useful thermal energy (such as heat or steam), used for industrial, commercial, heating, or cooling purposes. To receive status as a qualifying facility (QF) under the Public Utility Regulatory Policies Act (PURPA), the facility must produce electric energy and "another form of useful thermal energy through the sequential use of energy", and meet certain ownership, operating, and efficiency criteria established by the Federal Energy Regulatory Commission (FERC).

Combined cycle: An electric generating technology in which electricity is produced from otherwise lost waste heat exiting from one or more gas (combustion) turbines. The exiting heat is routed to a conventional boiler or to a heat recovery steam generator for utilization by a steam turbine in the production of electricity. This process increases the efficiency of the electric generating unit.

Combined cycle unit: An electric generating unit that consists of one or more combustion turbines and one or more boilers with a portion of the required energy input to the boiler(s) provided by the exhaust gas of the combustion turbine(s).

Commercial: The commercial sector is generally defined as non-manufacturing business establishments, including hotels, motels, restaurants, wholesale businesses, retail stores, and health, social, and educational institutions. The utility may classify commercial service as all consumers whose demand or annual use exceeds some specified limit. The limit may be set by the utility based on the rate schedule of the utility.

Conservation and Other DSM: This Demand-Side Management category represents the amount of consumer load reduction at the time of system peak due to utility programs that reduce consumer load during many hours of the year. Examples include utility rebate and shared savings activities for the installation of energy efficient appliances, lighting, and electrical machinery, and weatherization materials. In addition, this category includes all other Demand-Side Management activities, such as thermal storage, time-of-use rates, fuel stabilization, measurement and evaluation, and any other utility-administered Demand-Side Management activity designed to reduce demand and/or electricity use.

Cooperative electric utility: An electric utility legally established to be owned by and operated for the benefit of those using its service. The utility company will generate, transmit, and/or distribute supplies of electric energy to a specified area not being services by another utility. Such ventures are generally exempt from federal income tax laws. Most electric cooperatives have been initially financed by the Rural Electrification Administration, U.S. Department of Agriculture.

Current (Electric): A flow of electrons in an electrical conductor. The strength or rate of movement of the electricity is measured in amperes.

Demand (Electric): The rate at which electric energy is delivered to or by a system, or piece of equipment, at a given instant or averaged over any designated period of time.

Demand side management (DSM): The planning, implementation, and monitoring of utility activities designed to encourage consumers to modify patterns of electricity demand. It refers only to energy and load-shape modifying activities that are undertaken in response to utility-administered programs. It does not refer to energy and load-shape changes arising from the normal operation of the marketplace or from government-mandated energy-efficiency standards. Demand-Side Management (DSM) covers the complete range of load-shape objectives, including strategic conservation and load management, as well as strategic load growth.

Distribution system: The portion of an electric system that is dedicated to delivering electric energy to an end user.

Energy efficiency: Refers to programs that are aimed at reducing the energy used by specific end-use devices and systems, typically without affecting the services provided. These programs reduce overall electricity consumption (reported in megawatthours), often without explicit consideration for the timing of program-induced savings. Such savings are generally achieved by substituting technically more advanced equipment to produce the same level of end-use services (e.g. lighting, heating, motor drive) with less electricity. Examples include high-efficiency appliances, efficient lighting programs, high-efficiency heating, ventilating and air conditioning (HVAC) systems or control modifications, efficient building design, advanced motor drives, and heat recovery systems.

Energy service company (ESCO): A term which refers to a broad category of entities which offer conservation or other value added service (such as home security systems) and/or energy supply.

Exempt wholesale generator (EWG):. EWGs are exempt from PUHCA, but not exempt from other regulatory oversight, including that of FERC. Any facility wishing to be an EWG must obtain permission from FERC, which is done, in part, by convincing FERC that the EWG subsidiary does not share cost accounts with the parent utility.

Externalities: Factors affecting human welfare not included in the monetary cost of a product (i.e. air pollution caused by power generation).

Federal Energy Regulatory Commission (FERC): A quasi-independent regulatory agency within the Department of Energy having jurisdiction over interstate electricity sales, wholesale electric rates, hydroelectric licensing, natural gas pricing, oil pipeline rates, and gas pipeline certification.

Federal Power Act: Enacted in 1920, and amended in 1935, the Act consists of three parts. The first part incorporated the Federal Water Power Act administered by the formal Federal Power Commission, whose activities were confirmed almost entirely to licensing non-federal hydroelectric projects. Parts II and III were added with the passage of the Public Utility Act. These parts extended the Act's jurisdiction to include regulating the interstate transmission of electrical energy and rates for its sale as wholesale in interstate commerce. The Federal Energy Regulatory Commission is now charged with the administration of this law.

Fossil fuel plant: A plant using coal, petroleum, or gas as its source of energy.

Gas-turbine plant: A plant in which the prime mover is a gas turbine. A gas turbine consists typically of an axial-flow air compressor, one or more combustion chambers, where liquid or gaseous fuel is burned and the hot gases expand to drive the generator and are then used to run the compressor.

Generating unit: Any combination of physically connected generator(s), reactor(s), boiler(s), combustion turbine(s), or other prime mover(s) operated together to produce electric power.

Generation: The process of converting thermal, mechanical, chemical, or nuclear energy into electric energy.

Grid: The layout of an electrical distribution system.

Independent power producer (IPP): a non-utility generators that is not a qualifying facility. IPPs can be owned by a utility, as long as the IPP was not selling to the parent utility's final customers.

Industrial: The industrial sector is generally defined as manufacturing, construction, mining agriculture, fishing and forestry establishments Standard Industrial Classification (SIC) codes 01-39. The utility may classify industrial service using the SIC codes, or based on demand or annual usage exceeding some specified limit. The limit may be set by the utility based on the rate schedule of the utility.

Integrated resource planning (IRP): Utilities that are structured as a tax-paying business financed through sales of common stock.

Interruptible load: Refers to program activities that, in accordance with contractual arrangements, can interrupt consumer load at times of seasonal peak load by direct control of the utility system operator or by action of the consumer at the direct request of the system operator. It usually involves commercial and industrial consumers. In some instances the load reduction may be affected by direct action of the system operator (remote tripping) after notice to the consumer in accordance with contractual provisions. For example, loads that can be interrupted to fulfill planning or operation reserve requirements should be reported as Interruptible Load. (Interruptible Load, as defined here, is synonymous with Interruptible

Demand reported to the North American Electric Reliability Council on the voluntary Office of Energy Emergency Operations Form OE-411, "Coordinated Regional Bulk Power Supply Program Report", with the exception that annual peak load effects are reported on the Form EIA-861 and seasonal (i.e. summer and winter) peak load effects are reported on the OE-411).

Investor-owned utilities: Utilities that are structured as a tax-paying business financed through sales of common stock.

Independent system operator (ISO): Describes an insitution which would coordinate use of the transmission system in a competitive electricity market. Depending on the market structure, the ISO might also determine the dispatch of supply.

Kilowatt (kW): One thousand watts.

Kilowatt hour (kWh): A measure for energy that is equal to the amount of work done by 1,000 watts for one hour. Consumers are charged for electricity in cents per kilowatt hour (i.e., with one kilowatt hour, you can watch television for about three hours).

Load (Electric): The amount of electric power delivered or required at any specific point or points on a system. The requirement originates at the energy-consuming equipment of the consumers.

Municipal utility: An electric utility system owned and/or operated by a municipality that generates and/or purchases electricity at wholesale for distribution to retail customers within the boundaries of the municipality.

Non-firm power: Power or power-producing capacity supplied or available under a commitment having limited or no assured availability.

Non-utility power producer/generator: A corporation person, agency, authority, or other legal entity or instrumentality that owns electric generating capacity and is not an electric utility. Non-utility power producers include qualifying cogenerators, qualifying small power producers, and other non-utility generators (including independent power producers) without a designated franchised service area, and which do not file forms listed in the Code of Federal Regulations, Title 18, Part 141.

North American Electric Reliability Council (NERC): A council formed in 1968 by the electric utility industry to promote the reliability and adequacy of bulk power supply in the electric utility systems of North America. NERC consists of ten regional reliability councils and encompasses essentially all the power regional of the contiguous United States, Canada, and Mexico. The NERC Regions are:

ASCC - Alaskan System Coordination Council
ECAR - East Central Area Reliability Coordination Agreement
ERCOT - Electric Reliability Council of Texas
MAIN - Mid-America Interconnected Network
MAAC - Mid-Atlantic Area Council
MAPP - Mid-Continent Area Power Pool
NPCC - Northeast Power Coordinating Council
SERC - Southeastern Electric Reliability Council
SPP - Southwest Power Pool
WSCC - Western Systems Coordinating Council

Peak load plant: A plant usually housing old, low-efficiency steam units; gas turbines; diesels; or pumped-storage hydroelectric equipment normally used during the peak-load periods.

Power exchange: An institution is an independent open access spot market for power. It is designed to facilitate the efficient short-term operation of competitive power markets.

Power pool: An organization which manages the transmission system in a defined geographical area by corrdinating its use. Members include those participating in wholesale power markets. A "tight" power pool is one which perfroms economic dispatch of generating units.

POOLCO: An independent institution used to organize the wholesale electricity market. The POOLCO performs economic dispatch of generation units based upon the suppliers price bids and schedules. An hourly or half-hourly market clearing price for power would be established.

Power marketers: Power marketers are business entities engaged in buying and selling electricity, but do not own generating or transmission facilities. Power marketers, as opposed to brokers, take ownership of the electricity and are involved in interstate trade. These entities file with FERC for status as a power marketer.

Qualifying facility (QF): A cogeneration or small power production facility that meets certain ownership, operating, and efficiency criteria established by the Federal Energy Regulatory Commission (FERC) pursuant to the Public Utility Regulatory Policies Act (PURPA).

Rate base: The value of property upon which a utility is permitted to earn a specified rate of return as established by a regulatory authority. The rate base generally represents the value of property used by the utility in providing service and may be calculated by any one or a combination of the following accounting methods: fair value, prudent investment, reproduction cost, or original cost. Depending on which method is used, the rate base includes cash, working capital, materials and supplies, and deductions for accumulated provisions for depreciation, contributions in aid of construction, customer advances for construction, accumulated deferred income taxes, and accumulated deferred investment tax credits.

Regulatory compact: A theory advocated by some utilities which holds that in exchange for building the generation, transmission, and distribution infrastructure necessary to provide power to their service area, the utility is guaranteed a return on those investments.

Renewable energy : Energy produced from non fossil fuels.

Residential: The residential sector is defined as private household establishments which consume energy primarily for space heating, water heating, air conditioning, lighting, refrigeration, cooking, and clothes drying. The classification of an individual consumer's account, where the use is both residential and commercial, is based on principal use. For the residential class, do not duplicate consumer accounts due to multiple metering for special services (water, heating, etc.). Apartment houses are also included.

Retail: Sales covering electrical energy supplied for residential, commercial, and industrial end-use purposes. Other small classes, such as agriculture and street lighting, are also included in this category.

Sales for resale: Energy supplied to other electric utilities, cooperatives, municipalities, and federal and state electric agencies for resale to ultimate consumers.

Service territory: The geographical area served by a particular utility company.

Small power producer (SPP): Under the Public Utility Regulatory Policies Act (PURPA), a small power production facility (or small power producer) generates electricity using waste, renewable (water, wind, and solar), or geothermal energy as a primary energy source. Fossil fuels can be used, but renewable resource must provide at least 75 percent of the total energy input.

Spot purchases: A single shipment of fuel or volumes of fuel, purchased for delivery within 1 year. Spot purchases are often made by a user to fulfill a certain portion of energy requirements, to meet unanticipated energy needs, or to take advantage of low fuel prices.

Stranded benefits: Social programs and other regulatory "benefits" currently included in utility rates. The costs of these may not be recoverable in a competitive retail market.

Stranded costs: Assets that lose value in a competitive market.

System (Electric): Physically connected generation, transmission, and distribution facilities operated as an integrated until under one central management, or operating supervision.

Transmission: The movement or transfer of electric energy over an interconnected group of lines and associated equipment between points of supply and points at which it is transformed for delivery to consumers, or is delivered to other electric systems. Transmission is considered to end when the energy is transformed for distribution to the consumer.

Transmission system (Electric): An interconnected group of electric transmission lines and associated equipment for moving or transferring electric energy in bulk between points of supply and points at which it is transformed for delivery over the distribution system lines to consumers, or is delivered to other electric systems.

Turbine: A machine for generating rotary mechanical power from the energy of a stream of fluid (such as water, steam, or hot gas). Turbines convert the kinetic energy of fluids to mechanical energy through the principles of impulse and reaction, or a mixture of the two.

Wheeling service: The movement of electricity from one system to another over transmission facilities of intervening systems. Wheeling service contracts can be established between two or more systems.

Wholesale sales: Energy supplied to other electric utilities, cooperatives, municipals, and federal and state electric agencies for resale to ultimate consumers.

PART TWO. COMMITTEE RECOMMENDATIONS

After a comprehensive study of the issues surrounding the restructuring of the electric utility industry, the Committee makes the following general policy recommendations with additional specific recommendations designed to aid the legislature in their deliberations:

A) Restructure the Electric Utility Industry to Allow Competition Within the Generation Sector

The Committee recognizes that as large companies are able to negotiate special deals with electric companies for cheaper rates and as technological advances have brought forth efficient, cleaner sources of generation, average consumers can and must have the opportunity to harness new opportunities to save money and promote a cleaner environment. Allowing existing generators to compete in the retail market will promote lower prices for energy and encourage new, clean burning generation facilities to be built within our borders to both meet market demand and create new job opportunities.

To facilitate this move, the Committee recommends the following specific changes to the electric power industry:

- *Mandate the functional unbundling of existing electric utilities to create separate generation, transmission, and distribution companies. Maintain existing regulation over transmission and distribution of electricity, but allow the market to determine the price for electricity.*

- *Authorize a "retail access date" of January 1, 1998 to spur utilities to make necessary changes and prepare for market competition.*

- *Encourage the siting of new generation facilities in Massachusetts by restructuring the Energy Facilities Siting Board to eliminate any need or cost review over a proposed new facility. Both factors would be left to the market for determination.*

- *Further encourage the siting of new generation facilities in Massachusetts by allowing new generation facilities the option of claiming a tax exemption under chapter 59 of the General Laws, subject to certain conditions.*

- *Authorize the creation of a transmission oversght board to monitor the operations of any independent system operator formed under federal statute or regulation.*

B) Mandate a 10% rate reduction for all customers and empower consumers to take advantage of the market

Regardless of the opportunities for saving money by choosing an electricity supplier on the open market, the Committee recognizes some consumers may "choose not to choose" and allow their existing utility to buy power for them. These customers should nonetheless realize rate reductions as the industry transitions toward competition.

- *Codify a 10% rate reduction for all customers who continue to purchase energy from their exisiting supplier (standard offer service).*

- *Mandate that distribution companies offer a standard service package to their existing customers for a period of four years whereby a customer would be served by their distribution company for a period of time after the start of retail access. Customers could return to standard service within one year of choosing a power supplier should they be dissatisfied with their supplier.*

- *Authorize the creation of municipal retail load aggregators and energy cooperatives which would combine the demand for electricity among smaller customers to increase their bargaining power in the new power market. Participation would be voluntary.*

- *Exempt the purchase of energy related services by governmental bodies from the provisions of Chapter 30B.*

C) Enhance consumer protection requirements to protect against market abuses

The potential benefits of a competitive power market for retail customers must be tempered against possible abuses of the system by private generation companies and other suppliers. In an effort to minimize such abuses, the Committee specifically recommends the following:

- *Increase the power of the consumer protection division at the Department of Public Utilities through licensure requirements for generation facilities, non-municipal aggregators, power brokers and marketers; enhanced arbitration/mediation procedures; and requirements to provide technical assistance to municipalities and individual consumers. Further, the department would have the power to fine generation companies and other industry entities for violations of department rules and regulations.*

- *Require the department to provide ratepayers with a toll-free number for questions or complaints about their electric service.*

- *Mandate full disclosure of terms to consumers on any marketing efforts by generation companies, including standards for advertising "green" power, so-called.*

- *Mandate "truth-in-rates" through department rules and regulations.*

- *Mandate that distribution companies provide a default service at spot market prices to customers who have left the standard offer and whose contract with a private generation company or other supplier has failed.*

D) Allow utilities to recover certain past costs after full mitigation

The transition from a system where each ratepayer pays the full amount of costs incurred by electric companies to provide electric service to a system where the ratepayers pay the market price for energy demands a responsible approach from the legislature. Determining which past costs are truly "stranded" in a competitive market will be done best by the department of public utilities on a company by company basis. However, the legislature can and should encourage the mitigation of these costs through sale of generation assets and renegotiation of purchase power contracts before a company is granted stranded cost recovery by the department. It must be emphasized that in addition to the costs of facilities and purchase power contracts, these costs include utility workers pensions and tax payments to cities and towns currently siting facilities. They are costs which ratepayers currently pay and under the current system would continue to pay in the future. Under the Committee's recommendations these costs would only be paid for a set transition period of ten years and would decrease over that period of time.

Therefore, the risk of unnecessary destabilization of the industry prompts the Committee to recommend allowing the department of public utilities to grant stranded cost recovery to those utilities who can prove that market valuations for some of their assets are incapable of covering previously incurred costs. Such recovery, however, shall only be allowed after aggressive mitigation efforts have been undertaken to reduce those costs in the short term. The Committee therefore recommends the following specific measures to reach these objectives:

- *Provide for recovery of stranded costs through a capped access charge to be ratcheted downward over a period of ten years.*

- *Encourage divestiture of generation assets by utilities in an effort to determine an actual market valuation for those assets and therefore mitigate any allowed stranded cost recovery for those assets. Encourage both independent power producers and utilities to further mitigate stranded costs through renegotiation of purchase power contracts.*

- *Deny retail licensure to independent power producers which currently hold above market wholesale power contracts should they fail to renegotiate such contracts.*

- *Deny the ability of an independent power producer to obtain a tax exemption under chapter 59 of the general laws for a currently sited facility should such power producer fail to renegotiate above market purchase power contracts in their portfolio.*

- *Allow for the securitization of stranded costs in an effort to refinance at a lower rate certain outstanding liabilities of the utilities. Any monies received from securitization would be targeted to pay off sunk costs expended on generation facilities and for renegotiation of purchase power contracts at lower rates.*

- *Mandate an audit of department records in an effort to provide an accurate baseline for determining stranded costs in the future.*

- *Mandate a review every two years of allowed stranded costs with a provision mandating reconciliation between projected and actual stranded costs.*

E) Recognize the special needs of both utility employees and cities and towns which currently site electric generators

As generation facilities across the state gear up to compete in the retail electric market, the market value of electricity will be standard by which these facilities gauge their performance. In light of this, utility employees have been and may likely be pressured to retrain, retire, or possibly face lay-offs. Addressing the needs of this "stranded" human investment should be a priority for the legislature during the transition to a competitive power market.

Likewise, the market value of existing generation facilities will vary depending on their efficiency, their location, and the type of energy needed to produce power at those facilities. Cities and towns which currently site generation facilities have traditionally based their property tax assessments on the book value (or cost minus depreciation) of those plants. Such book value is likely to be higher than the market value for those plants, especially in the case of nuclear power plants like the Pilgrim nuclear plant in the town of Plymouth.

While both employees and cities and towns have been adversely affected in the past when companies restructure, the Committee recognizes the special circumstances of electric utility restructuring in recommending protections for these important resources. While most companies restructure based on their own business decisions, the electric utility industry is restructuring based primarily on government policy both at the federal and state levels. Further, to the extent that cost recovery is allowed to be collected by utilities for above market assets during the transition, the Committee would argue that protections for utility employees and host communities are both fair and advisable. Therefore the Committee specifically recommends:

- *Inclusion of costs for job training, severance, and early retirement benefits for "blue collar" employees in the access charge authorized for collection of stranded costs for a period of seven years.*

- *Coverage for employees under the "plant closings" statute, so-called, for those utility employees not receiving adequate benefits upon termination from generation facilities [for a period of x years].*

- *Inclusion of costs for property taxes and payments in lieu of property taxes in the access charge authorized for collection of stranded costs for a period of ten years.*

- *Mandate owners of existing generation facilities to continue tax payments to cities and towns hosting their facilities for a period of ten years at a level which initially equals the assessment on the property in the year 1997 and ramps down to market value over such ten year period. Such facilities would not be allowed to claim an exemption from taxation under chapter 59 of the general laws.*

- *Allow cities and towns which currently host generation facilities which lose more than 50% of their value after deregulation to apply for status as an economic target area as a means of promoting local economic development.*

F) Increase Environmental Protection Efforts

Changes in technology have resulted in more efficient generation facilities which produce significantly less pollution than many currently sited facilities. Production of electricity through natural gas rather coal or oil appears to be the favored fuel choice for many power suppliers. However, unless the relatively dirtier plants currently sited reduce their emissions or go off line altogether, the environmental benefits of newer plants will be much less beneficial. Further, encouragement of generation facilities which use renewable energy sources, such as sun and wind, would serve to diversify the portfolio of choices available to energy users in the future while increasing the quality of our air. As such, the Committee makes the following specific environmental protection recommendations:

- *Authorize the department of environmental protection to adopt and implement uniform generation performance standards for all generation facilities, including those sited outside of the Commonwealth if they serve retail customers within Massachusetts.*

- *Authorize a renewables fund to be created through a charge of one mil ($0.001) per kilowatt-hour to be distributed to generation companies wishing to develop renewable energy facilities within the Commonwealth.*

- *Continue demand side management programs for a period of five years to encourage energy conservation within the Commonwealth. Such programs would subject to a bid process, however, to encourage market efficiencies for such services.*

G) Protect Municipal Light Departments

The Commonwealth's forty municipal light departments have a distinct role in providing electric service to their citizens. Citizens served by these departments are the "shareholders" of these assets, not private investors. Elected bodies in each of these municipalities have, in the past, created these departments, and have the right in the future to dissolve these departments should the benefits of allowing market competition present themselves. After the Committee's public meetings in November and subsequent correspondence to each municipal light department and their state representatives, the Committee makes the following specific recommendations:

- *Exempt municipal light departments from the provisions of legislation restructuring investor owned utilities and protect home rule by allowing communities served by these departments to decide for themselves on the benefits of competition.*

- *Provide for mandated reciprocity should a municipal light department wish to use its assets to sell power outside of their service territory. As a result, a municipal light department would have to allow its ratepayers the right to choose a supplier outside of the municipal service territory should the department wish, itself, to serve customers outside of the municipal service territory.*

Additionally, the Committee is attaching proposed legisative changes to the Massachusetts Municipal Wholesale Electric Corporation (MMWEC) as an appendix in an effort to allow the Joint Committee on Government Regulations to consider this proposal in the context of electric utility restructuring. The Special Joint Committee on Electric Utility Restructuring takes no formal position, however, on the proposal as it is presented.

H) Restructure the Department of Public Utilities

The department must evolve to meet the challenges of both a restructured electric utility industry and the previously deregulated telecommunications industries. As each of these formerly fully regulated fields move to compete in the marketplace, mergers among and between these industries will redefine how every business and consumer utilizes their services. Therefore the Committee recommends:

- *Expansion of the department through increased assessments on distribution companies and new licensing fees and assessments on competitive generation companies. Staff in each division- electric power, telecommunications, gas, rates, and especially consumer protection, should increase to address an*

increased reliance on the department for technical assistance and consumer information. Salaries should be adjusted in an effort to retain skilled professionals and bring the department's compensation levels within the nationwide average.

- *Create a Special Deregulation Commission through the Executive Office of Consumer Affairs to further study and monitor deregulation efforts in many of the major regulated industries, including electric, gas, telecommunications, and cable television. As electric companies form partnerships with other wires companies, such as those providing cable television, the department must be ready and able to maintain adequate oversight over the regulated aspects of these industries, while fostering competition generally. The commission shall include members from the executive and legislative branches as well as industry officials, consumer protection advocates, and labor representatives.*

APPENDIX ONE: LEGISLATION

APPENDIX TWO: MMWEC LEGISLATION

AN ACT TO PROMOTE COMPETITION IN THE ELECTRIC UTILITY INDUSTRY

SECTION 1. **FINDINGS.** The Joint Committee on Electric Utility Restructuring finds that the commonwealth currently has some of the highest electricity rates in the country and that these rates have a significant adverse effect on the residents and businesses of the state. The process of generating, transmitting, and distributing electric power has for decades been performed by heavily regulated electric utilities which have had monopoly status over large service areas in the commonwealth. Through market pressures and advances in technology, the generating sector of the electric power market appears ready and able to generate electricity at a lower cost than would be possible under a regulated system. However, the benefits of the current system, such as reliability, cost saving conservation measures, investments in renewable energy sources, and programs for lower income residents of the commonwealth, shall and must continue as the industry experiences a transition to a competitive market. The needs of industry, which always must adjust to competitive pressures within and beyond the borders

of the commonwealth, and commercial and residential customers, whom are burdened with high electric costs with few alternatives for power, all must be addressed in any legislative effort to restructure the electric power market. Therefore, the following statutory and regulatory changes are recommended.

SECTION 2. STRUCTURE OF DEPARTMENT OF PUBLIC UTILITIES

A. The Secretary of the Executive Office of Consumer Affairs is hereby authorized and directed to create a Special Deregulation Commission to study the ramifications of past and future efforts to restructure the major regulated industries serving the commonwealth's consumers, including the restructuring of the electric utility industry, telephone and telecommunications industry, gas industry and cable television industry. The commission shall include the secretary of the executive office of consumer affairs, or a designee, two members of the legislature, one chosen by the speaker of the house, one chosen by the president of the senate, the attorney general, or a designee, a representative from each of the four aforementioned major regulated industries, two consumer protection advocates, and two members representing the interests of industry employees. The commission shall study and make recommendations on the future regulatory role of the commonwealth over these industries including, but not limited to, the issues of merging the Cable Television Commission into the Department of Public Utilities to create a new Department of Regulated Industries, and requiring the department to promulgate model rules and regulations governing the conduct, operation and rate structure of merged regulated industries including, but not limited to, merged electric and cable television companies, merged electric and gas companies and merged telephone and cable television companies. The commission shall issue an initial report to the Joint Committee on Government Regulations on or before March 31, 1998.

B. The department of public utilities is hereby authorized and directed to create within the department a division of consumer protection which shall have the authority to implement rules and regulations authorized by and subject to section 8 (B) of this act, including, but not limited to, rules and regulations governing the oversight of licensure and registration requirements for generation companies and suppliers as defined by this act; providing technical assistance to municipalities choosing to aggregate demand for electricity; mediating disputes between customers and generation companies or customers and distribution companies; and levying fines for violations of regulations promulgated by the department.

C. Assessments

(1) Chapter 25 of the General Laws, as appearing in the 1994 Official Edition, is hereby amended by striking out section 18 and inserting in place thereof the following section:--

Section 18. The commission is hereby authorized to make an assessment against each electric, gas, telephone and telegraph company under the jurisdictional control of the department and each generation company and supplier licensed to do business in the commonwealth by the department, based upon the intrastate operating revenues subject to the jurisdiction of the department of each of said companies derived from sales within the commonwealth of electric, gas, telephone and telegraph service respectively, as shown in the annual report of each of said companies to the department.

Said assessments shall be made at a rate not exceeding two-tenths of one percent of such intrastate operating revenues, as shall be determined and certified annually by the commission as sufficient to reimburse the commonwealth for funds appropriated by the general court for the operation and general administration of the department and for fringe benefits costs, including group life and health insurance, retirement benefits, paid vacations and holidays and sick leave, not to exceed twenty-two percent of the amount attributable to personnel costs of employees of the department in the fiscal year in which the assessments made, exclusive of funds appropriated by the general court for the transportation division. The funds may be use to compensate consultants in hearings on petitions filed by companies subject to assessment under this section. Any funds unexpended in any fiscal year for the purposes for which such assessments were made shall be credited against the assessment to be made in the following fiscal year and the assessment in the following fiscal year shall be reduced by any such unexpended amount. Assessments made under this section may be credited to the normal operating cost of each company. Such estimated assessments shall be collected by the department. Each company shall pay the amount assessed against it within thirty days after the date of the notice of estimated and actual amounts of such assessments. Such estimated and actual costs shall include an amount equal to the cost of fringe benefits as established by the commissioner of administration pursuant to section six B of chapter twenty-nine.

For the purpose of providing the department with additional operating funds for the regulation of electric companies, the commission is authorized to make a separate assessment proportionally against each electric company under the jurisdiction of the department and each generation company and supplier licensed by the department to business in the commonwealth of each of said companies derived from wholesale and retail sales of electricity within the commonwealth as shown in the annual report of said companies to the department. Said additional assessment shall be made at a rate as shall be determined and certified annually by the commission as sufficient to produce not more than one million, seven hundred and fifty thousand dollars in revenue for the fiscal year in which the assessment is made and shall be collected by the department. The commission is also authorized to expend for the operation of the department such amounts which are appropriated for that purpose.

A schedule of filing fees shall be determined annually by the commissioner of administration under the provisions of section three B of chapter seven for the following: (a) petitions for certificates of environmental impact and public need; provided however, that such filing fee for any municipal corporation empowered to operate a municipal lighting plant under the provisions of section thirty-five or thirty-six of chapter one hundred and sixty-four shall not exceed a maximum amount; and (b) notices of intention to construct an oil facility- a maximum amount per oil facility to be graduated in accordance with the expected capital investment in the facility.

Notwithstanding the provisions of section twenty of chapter one hundred and fifty-nine and section ninety-four of chapter one hundred and sixty-four, during any fiscal year in which such assessment is made, the department shall have no authority to suspend the effective date of any rate, price or charge set forth in any schedule filed subsequent to January first, nineteen hundred and seventy seven, by a telephone or telegraph company under the provisions of section ninety-four of chapter one hundred and sixty-four for a period longer than six months; provided, however, that in the even that such six month period expires on a Sunday or legal holiday, any rate price or charge suspended under this section shall remain suspended until the day following the next day which is not a Sunday or legal holiday.

(2) Said chapter 25 is hereby further amended by striking sections 17 through 17A.

D. Said chapter 25 of the general laws is hereby further amended in section 2 by striking the first and second sentence and inserting in place thereof the following:--

The department shall be under the supervision and control of a commission consisting of five members, in this chapter called the commission. During the year 1999, three commissioners shall be appointed by the governor for a term of two years. During the year 2000, two additional commissioners shall be appointed by the governor for a term of two years. Subsequent two year appointments shall be made as the term of each original appointee ends.

E. Said chapter 25 as it appears in the 1994 Official Edition is hereby further amended in section 2 by striking the fifth sentence.

SECTION 3. **SECURITIZATION**

A. Chapter 164 of the General Laws is hereby amended by inserting after section 133 the following sections: -

Section 134. For the purposes of sections 134 through 139 of this chapter, the following terms shall have the following meanings:

"Financing entity", the Health and Educational Facilities Authority;

"Electric company", an electric company as defined in section one;

"Financing order", an order of the department adopted in accordance with this chapter, which shall include, without limitation, a procedure to require the expeditious approval by the department of periodic adjustments to stranded costs included therein to ensure recovery of the correct amount of stranded costs;

"Fixed stranded cost reimbursement amounts", the total amount to be collected through the stranded cost access charge and allocated to an electric company in accordance with a financing order;

"Rate reduction bonds" means bonds, notes, certificates of participation or beneficial interest, or other evidences of indebtedness or ownership, issued pursuant to an executed indenture or other agreement of a financing entity, the proceeds of which: (1) are used to provide, recover, finance, or refinance stranded costs or to acquire transition property and that are secured by or payable from transition property; (2) shall be deposited in the Massachusetts Electricity Deregulation Public Trust as established herein for that purpose and distributed to an electric company in accordance with a financing order; and (3) shall qualify

for tax-exempt status under the laws of the commonwealth and to the full extent allowed under federal tax law;

"Stranded costs", the costs allowed by law that remain after accounting for maximum possible mitigation, subject to determination by the department of public utilities;

"Transition property", the property right created pursuant to this chapter including, without limitation, the right, title, and interest of an electric company or a financing entity to all revenues, collections, claims, payments, money, or proceeds of or arising from or constituting fixed stranded cost reimbursement amounts that are the subject of a financing order.

Section 135.(a) Each electric company shall, by January 1, 1999, and from time to time thereafter as established by the department, file with the department an application that provides that its stranded costs shall be recovered through fixed stranded cost reimbursement amounts, which would therefore constitute transition property under this chapter. The department may view such applications in separate proceedings or in an order instituting investigation or order instituting rulemaking, or both. The electric company shall in its application specify that its customers would benefit from reduced rates through the issuance of rate reduction bonds. The department shall determine fixed stranded cost reimbursement amounts recoverable in one or more financing orders if the department determines, as part of its findings in connection with the financing order, that the designation of the fixed stranded cost reimbursement amounts and the issuance of rate reduction bonds by a financing entity in connection with some or all of the fixed stranded cost reimbursement amounts would reduce rates that an electric company's customers would have paid if the financing order were not adopted; provided, that said bonds shall qualify for tax-exempt status to the full extent of the law; provided, further that the department shall consult with the financing entity in making its determinations concerning rate reduction bonds and; provided, further, that the electric company has complied with all stranded cost mitigation measures as provided by law. These customers shall continue to pay fixed stranded cost reimbursement amounts until the bonds are paid in full by the financing entity.

(b) The department may issue financing orders in accordance with this chapter to facilitate the provision, recovery, financing, or refinancing of stranded costs. A financing order may specify how amounts collected from a customer shall be allocated between stranded cost access charges and other charges.

(c) Notwithstanding any other provision of law, except as otherwise provided in this section with respect to transition property that has been made the basis for the issuance of rate reduction bonds, the financing orders and the fixed stranded cost reimbursement amounts shall be irrevocable and the department shall not have authority either by rescinding, altering, or amending the financing order or otherwise, to revalue or revise for ratemaking purposes the stranded costs, determine that the fixed stranded cost reimbursement amounts or stranded cost access charges are unjust or unreasonable, or in any way reduce or impair the value of transition property either directly or indirectly by taking fixed stranded cost reimbursement amounts into account when setting other rates for the electric company; nor shall the amount of revenues arising with respect thereto be subject to reduction, impairment, postponement, or termination. Except as otherwise provided in this subdivision, the commonwealth does hereby pledge and agree with the owners of transition property and holders of rate reduction bonds that the state shall neither limit nor alter the fixed stranded cost reimbursement amounts, transition property, financing orders, and all rights thereunder until the obligations, together with the interest thereon, are fully met and discharged, provided nothing contained in this section shall preclude the limitation or alteration if and when adequate provision shall be made by law for the protection of the owners and holders. The financing entity as agent for the commonwealth is authorized to include this pledge and undertaking for the commonwealth in these obligations. Notwithstanding any other provision of this section, the department shall review a financing order periodically, at a minimum not less than on the second, fourth, sixth, eighth, and tenth anniversaries of the original financing order, to determine if the amount of fixed stranded cost reimbursement proved to be accurate. Such review shall be limited to a comparison of assumed costs and assumed mitigation to the actual costs determined through actual mitigation. If the amount of fixed stranded cost reimbursement previously included in a financing order exceeds the correct amount of the fixed stranded cost reimbursement, then the electric company shall repay to the Massachusetts Electricity Deregulation Public

Trust an amount necessary to redeem or otherwise reduce the amount of the principle of the rate reduction bonds to reflect the correct amount of the stranded cost reimbursement amounts. The department shall approve the adjustments to the fixed stranded cost reimbursement amounts as may be necessary to ensure timely and accurate recovery of stranded costs that are the subject of the pertinent financing order.

(d)(1) Financing orders issued under this chapter do not constitute a debt or liability of the commonwealth or of any political subdivision thereof, other than the financing entity, and do not constitute a pledge of the full faith and credit of the commonwealth or any of its political subdivisions, other than the financing entity, but are payable solely from the funds provided therefor under this chapter. All the bonds shall contain on the face thereof a statement to the following effect:

"Neither the full faith and credit nor the taxing power of the Commonwealth of Massachusetts is pledged to the payment of the principal of, or interest on, this bond."

(2) The issuance of bonds under this chapter shall not directly, indirectly, or contingently obligate the state or any political subdivision thereof to levy or to pledge any form of taxation therefor or to make any appropriation for their payment.

(3) The Massachusetts Electricity Deregulation Public Trust is hereby created. The Trust shall have five trustees: the secretary of administration and finance, ex officio, or his designee, the chairman of the department of public utilities, ex officio, or his designee, the state treasurer, ex officio, or his designee, and two members appointed by the governor for five year terms, one such member to represent the electric utility industry and one such member to represent consumers of electricity. All moneys received pursuant to the authority of this act, whether as proceeds from the sale of bonds or other instruments or as revenues, including those collected from the stranded cost access charges, shall be deemed to be trust funds to be held and applied solely as provided in this act and shall be deposited in said Trust. Said Trust shall

disburse monies deposited therein pursuant to financing orders and the terms of rate reduction bond indentures.

(4) The exercise of the powers granted by this act will be in all respects for the benefit of the people of the commonwealth, for the increase of their commerce and prosperity, and for the improvement of their health and living conditions, and as the exercise of such powers will constitute the performance of essential governmental functions, the financing entity shall not be required to pay any taxes or assessments upon the property acquired or used by the financing entity under the provisions of this act or upon the income therefrom, and the bonds or other instruments issued under the provisions of this act, their transfer and the income therefrom (including any profit made on the sale thereof), shall at all times be free from taxation within the commonwealth.

(5) Any bonds or other instruments issued by the financing entity shall be used only to pay for the following stranded costs: (a) the amount of fixed cost incurred before August 16, 1995 associated with producing electricity from existing generation facilities that shall not be recoverable through the competitive market price for generation, subject to any mitigation provisions provided by law and approval by the department and (b) the amount by which the costs of existing contractual commitments for purchased power signed before August 16, 1995 exceeds the competitive market price for such power subject to any mitigation provisions provided by law.

(6) Bonds and other instruments approved issued by the financing entity under the provisions of this act are hereby made securities in which all public officers and public bodies of the commonwealth and its political subdivisions, all insurance companies, and savings banks, cooperative banks and trust companies in their banking departments and within the limits set by section fourteen of Chapter one hundred and sixty-seven E of the General Laws, banking associations, investment companies, executors, trustees and other fiduciaries, and all other persons whatsoever who are now or may hereafter be authorized to invest in bonds or other obligations of a similar nature, may properly and legally invest funds, including capital

in their control or belonging to them, and such bonds are hereby made obligations which may properly and legally be made eligible for the investment of savings deposits and the income thereof in the manner provided by section fifteen B of Chapter one hundred and sixty-seven of the General Laws. Such bonds are hereby made securities which may properly and legally be deposited with and received by any state or municipal officer or any agency or political subdivision of the commonwealth for any purpose for which the deposit of bonds or other obligations of the commonwealth is now or may hereafter be authorized by law.

(e) The department shall establish procedures for the expeditious processing of applications for financing orders, including the approval or disapproval thereof within one hundred and twenty days of the electric company filing; provided, however, that an electric company shall file a new application with the department within 45 days of any such disapproval, if so ordered by the department. The department shall provide in any financing order for a procedure for the expeditious approval by the department of periodic adjustments to the fixed stranded cost reimbursement amounts that are the subject of the pertinent financing order, as required herein. The procedure shall require the department to determine whether the adjustments are required periodically, at a minimum not less than on the second, fourth, sixth, eighth, and tenth year anniversaries of the original financing order, and for the adjustments, if required, to be approved within ninety days of such review of a financing order.

(f) Fixed stranded cost reimbursement amounts shall constitute transition property when, and to the extent that, a financing order authorizing the fixed stranded cost reimbursement amounts has become effective in accordance with this chapter, and the transition property shall thereafter continuously exist as property for all purposes with all of the rights and privileges of this article for the period and to the extent provided in the financing order, but in any event until the rate reduction bonds are paid in full, including all principal, interest, premium, costs, and arrearages thereon.

(g) Any surplus fixed stranded cost reimbursement amounts in excess of the amounts necessary to pay principal, premium, if any, interest and expenses of the issuance of the rate reduction bonds shall be used by the Massachusetts Electric Deregulation Public Trust to benefit customers by redeeming or otherwise reducing the principal amount of outstanding rate reduction bonds.

Section 136.(a) Financing entities may issue rate reduction bonds approved by the department in the pertinent financing orders. Rate reduction bonds shall be nonrecourse to the credit or it or any assets of the electric company, other than the transition property as specified in the pertinent financing order.

(b) Electric companies may sell and assign all or portions of their interest in transition property to an affiliate. Electric companies or their affiliates may sell or assign their interests to one or more financing entities that make that property the basis for issuance of rate reduction bonds to the extent approved in the pertinent financing orders.

Electric companies, their affiliates, or financing entities may pledge transition property as collateral for rate reduction bonds to the extent approved in the pertinent financing orders providing for a security interest in the transition property, in the manner as set forth in Section 135. In addition, transition property may be sold or assigned by: (1) the financing entity or a trustee for the holders of rate reduction bonds in connection with the exercise of remedies upon a default, or (2) any person acquiring the transition property after a sale or assignment pursuant to this subdivision.

(c) To the extent that any interest in transition property is so sold or assigned, or is so pledged as collateral, the department shall require the electric company to contract with the financing entity that it will continue to operate its system to provide service to its customers, will collect amounts in respect of the fixed stranded cost reimbursement amounts for the benefit and account of the financing entity, and will account for and remit these amounts to or for the account of the financing entity. Contracting with the

financing entity in accordance with that authorization shall not impair or negate the characterization of the sale, assignment, or pledge as an absolute transfer, a true sale, or security interest, as applicable.

(d) Notwithstanding any other provision of law, any requirement under this chapter or a financing order that the department take action with respect to the subject matter of a financing order shall be binding upon the department, as it may be constituted from time to time, and any successor agency exercising functions similar to the department and the department shall have no authority to rescind, alter, or amend that requirement in a financing order.

Section 137.(a) A security interest in transition property is valid, is enforceable against the pledgor and third parties, subject to the rights of any third parties holding security interests in the transition property perfected in the manner described in this section, and attaches when all of the following have taken place:

(1) The department has issued the financing order authorizing the bondable stranded cost reimbursement amounts included in the transition property.

(2) Value has been given by the pledgees of the transition property.

(3)The pledgor has signed a security agreement covering the transition property.

(b) A perfected security interest in transition property is a continuously perfected security interest in all revenues and proceeds arising with respect thereto, whether or not the revenues or proceeds have accrued. Conflicting security interests shall rank according to priority in time of perfection. Transition property shall constitute property for all purposes, including for contracts securing rate reduction bonds, whether or not the revenues and proceeds arising with respect thereto have accrued.

(c) Subject to the terms of the security agreement covering the transition property and the rights of any third parties holding security interests in the transition property perfected in the manner described in this section, the validity and relative priority of a security interest created under this section is not defeated or adversely affected by the commingling of revenues arising with respect to the transition property with other funds of the electric company that is the pledge or transferor of the transition property. Subject to the

terms of the security agreement, the pledgees of the transition property shall have a perfected security interest in all cash and deposit accounts of the electric company in which revenues arising with respect to the transition property have been commingled with other funds, but the perfected security interest shall be limited to an amount not greater than the amount of the revenues with respect to the transition property received by the electric company within 12 months before: (1) any default under the security agreement, or (2) the institution of insolvency proceedings by or against the electric company, less payments from the revenues to the pledgees during that 12-month period.

Section 138. A transfer of transition property by an electric company to an affiliate or to a financing entity, or by an affiliate of an electric company or a financing entity to another financing entity, which the parties have in the governing documentation expressly stated to be a sale or other absolute transfer, in a transaction approved in a financing order, shall be treated as an absolute transfer of all of the transferor's right, title, and interest (as in a true sale), and not as a pledge or other financing, of the transition property, other than for federal and state income purposes. Granting to holders of rate reduction bonds a preferred right to revenues of the electric company, or the provision by the company of other credit enhancement with respect to rate reduction bonds, shall not impair or negate the characterization of any transfer as a true sale, other than for federal and state income purposes.

Section 139. Any successor to the electric company, whether pursuant to any bankruptcy, reorganization, or other insolvency proceeding, or pursuant to any merger, sale, or transfer, by operation of law, or otherwise, shall perform and satisfy all obligations of the electric company pursuant to this chapter in the same manner and to the same extent as the electric company, including, but not limited to, collecting and paying to the holders of rate reduction bonds or their representatives or the applicable financing entity revenues arising with respect to the transition property sold to the applicable financing entity or pledged to secure rate reduction bonds.

Section 140. The amount of stranded cost access charges collected for each utility shall be deposited in a separate account within the trust to ensure that no cross-subsidization of access charges results. However, should the department authorize the partial blending of access charges at a level which does not result in cross-subsidization, pursuant to section 5 (G) (5) of this act, a further separate account shall be created to hold pooled access charges eligible to back revenue bonds which may be subject to exemption from federal taxation.

SECTION 4. **TRANSMISSION ISSUES- ISO/Power Exchange Oversight**

A. There is hereby established within the department of public utilities a Transmission Oversight Board to monitor the operations of any Independent Systems Operator formed through federal statute or regulation. The board shall consist of six members including the chairman of the department of public utilities, or a designee, the commissioner of the division of energy resources, or a designee, a member of the energy facilities siting board in addition to the aforementioned chairman of the department of public utilities, the attorney general or a designee, and two citizens of the commonwealth chosen by the governor. As of January 1, 1999, the Transmission Oversight Board shall issue a report by March 31 of each year and submit such report to the Joint Committees on Government Regulations and Energy, respectively, containing information on all issues of system reliability including, but not limited to, detailing load and capacity for the period of January 1 through December 31 of the previous year and outlining potential future capacity excesses or deficits. Board members shall serve three year terms with the citizen members having no limit on reappointment.

B. The Division of Energy Resources is hereby authorized and directed to monitor any power exchange which forms as a result of legislative authorization of direct retail access. The division shall annually issue a report on spot prices of electricity during the period of January 1 through December 31 of each year, including but not limited to reporting the average monthly spot price, and submit such report to the Joint Committees on Government Regulations and Energy, respectively, no later than March 31 of each year after the first full year subsequent to January 1, 1998 or the actual retail access date, whichever is later.

SECTION 5. **RULES GOVERNING DPU APPROVAL OF RESTRUCTURING PLANS**

A. **Definitions**

(1) Section 1 of chapter 164 of the general laws, as appearing in the 1994 Official Edition, is hereby amended by inserting before the definition of "alternative energy producer" the following definition:--

"Aggregator", an entity which groups electricity customers, except for public entities, quasi-public entities or authorities or subsidiary organizations thereof, established under the laws of the commonwealth.

(2) Said section 1 of chapter 164, as so appearing, is hereby further amended by inserting after the definition of "alternative energy producer" the following definition:--

"Ancillary services", those functions that support generation, transmission, and distribution and shall including the following services: (1) reactive power/voltage control; (2) loss compensation; (3) scheduling and dispatch; (4) load following; (5) system protection service; and (6) energy imbalance service.

(3) Said section 1 of chapter 164, as so appearing is hereby further amended by inserting after the definition of "department" the following definitions:--

"Distribution", the delivery of power over lines that operate at a voltage level typically equal to or greater than 110 volts and less than 69,000 volts to an end-use customer within Massachusetts. The distribution of electricity is subject to the jurisdiction of the department.

"Distribution company", a company engaging in the distribution of electricity or owning, operating, or controlling distribution facilities. A distribution company shall be subject to chapter 164 of the general laws, unless otherwise provided in this act.

"Distribution Facility", plant or equipment used for the distribution of electricity and which is not a transmission facility, a cogeneration facility or a small power production facility.

"Distribution service", the delivery of electricity to the customer by the electric distribution company from points on the transmission system or from a generating plant, at distribution voltage.

(4) Said section 1 of said chapter 164, as so appearing is hereby further amended, by inserting in the definition of "electric company", in line 3, after the words "or distributing and selling," the following words:--

or only distributing

(5) Said section 1 of said chapter 164, as so appearing, is hereby further amended by inserting after the definition of "electric company" the following definitions:--

"Electric service", the provision of generation, transmission, distribution, and/or ancillary services.

"Energy Efficiency", the application of the least amount of energy required to produce a desired output.

"FERC", the Federal Energy Regulatory Commission.

(6) Said section 1 of chapter 164, as so appearing, is hereby further amended by inserting after the definition of "gas company" the following definitions:--

"Generation", the act or process or transforming other forms of energy into electric energy, or the amount of electric energy so produced.

"Generation Company", a company engaging in the business of producing, manufacturing, or generating electricity for sale at wholesale or for retail sale to the public. A generation company shall not be subject to regulation as a public utility except as specifically provided in the general laws.

"Generation Facility", plant or equipment used to produce, manufacture or otherwise generate electricity and which is not a transmission facility.

"Generation service", the provision of generation and related services to a customer.

"Horizontal market power", where one or a few market participants combined have undue concentration in the ownership of facilities at the same level in the chain of production resulting in the ability to influence price to his or their own benefit.

"Mitigation", all actions or occurrences that reduce the amount of money that a distribution company shall need to collect through the stranded cost access charge, including those costs resulting from both matters within the company's control and from matters not wholly within the company's control. Mitigation shall include, but not be limited to: (1) sales of capacity, energy, and ancillary services from generating facilities that are wholly or partly owned by the company; (2) sales of capacity, energy, and ancillary services from generating facilities with which the company has a power purchase agreement; (3) adjustments to the company's minimum obligations under purchase power agreements that decrease such obligations, such as those that may be obtained through contract buy-out or renegotiation; (4) residual

value; (5) sales and voluntary writedowns of company assets; and (6) any allowed refinancing of stranded costs as provided by law.

(7) Said section 1 of said chapter 164, as so appearing, is hereby further amended by inserting after the definition of "primary energy source" the following definitions:--

"Renewables", those renewable energy sources or emerging technologies that are relatively immature but have significant potential for commercialization in New England, and shall include solar and wind power projects, fuel cells and biomass (limited to dedicated fuel stock cultivation, except wood).

"Residual value" shall mean the value of electric company assets, not including the income that may be obtained through generation facility operation.

"Retail Access" the use of transmission and distribution facilities owned by a transmission company or a distribution company to transport electricity sold by a generation company to retail customers.

(8) Said section 1 of chapter 164, as so appearing, is hereby further amended by inserting after the definition of "small power production facility" the following definitions:--

"Stranded cost access charge", the charge that provides the mechanism for recovery of an electric company's stranded costs.

"Supplier", shall mean any supplier of generation service to retail customers, including power marketers, brokers, and marketing affiliates of distribution companies, except that no generation company, electric company, or aggregator shall be considered a supplier.

(9) Said section 1 of chapter 164, as so appearing, is hereby further amended by inserting after the definition of "supplying electricity in bulk" the following definitions:--

"Transmission", the delivery of power over lines that operate at a voltage level typically equal to or greater than 69,000 volts from generating facilities across interconnected high voltage lines to where it enters a distribution system. The transmission of electricity shall be subject to the jurisdiction of the FERC.

"Transmission Company", a company engaging in the transmission of electricity or owning, operating, or controlling transmission facilities. A transmission company shall provide transmission service to all generation companies and customers in Massachusetts, whether affiliated or not, on comparable, nondiscriminatory prices and terms, according with provisions of federal law and regulation.

"Transmission Facility", plant or equipment used for the transmission of electricity as determined by the Federal Energy Regulatory Commission pursuant to federal law and regulation.

"Unbundled rates", rates designed to separate the costs of providing generation, transmission, and distribution services, and stranded and general access charges.

"Vertical market power", where one or a few market participants, having joint ownership of facilities at differing levels of the chain of production, such as generation, transmission, and distribution, have the ability to use such joint ownership to influence price to the participants' own benefit.

B. FERC, Regional Coordination

The department is authorized and directed to coordinate with the operator of the bulk power system in New England (currently the New England Power Pool, or "NEPOOL"), FERC, and other state public utility commissions to adopt and implement appropriate policy initiatives and statutory reforms, including the reform or replacement of NEPOOL to ensure the independent operation of the regional transmission system, in order to provide for full and fail competition in electric generation while preserving the reliability of the system.

C. Regional Oversight Committee

The department is hereby authorized and directed to pursue the formation of a regional oversight committee with members from the various public utilities regulatory bodies from Connecticut, Maine, New Hampshire, New York, Rhode Island, and Vermont to monitor any independent systems operator serving the New England/New York area formed through federal statute or regulation. Said committee, if formed, shall be encouraged to pursue regional coordination of transmission oversight in an effort to jointly monitor issues of reliability which affect the region as a whole.

D. Retail Access Authorization

The department is hereby authorized to approve restructuring plans submitted by electric companies doing business in the commonwealth which allow for retail access to generation services. On or before October 1, 1997, any electric company organized under the provisions of chapter one hundred sixty four shall file with the department a detailed plan for restructuring their operations to allow for the introduction of retail competition between generation facilities, subject to the provisions of this act. The

department shall review each plan consistent with the provisions outlined in this act. Each plan shall be designed to allow an electric company formed under the provisions of chapter 164 to compete in a deregulated electric generation market by January 1, 1998, through the functional unbundling of the company's generation, transmission and distribution assets into separate companies as provided in subsection (E) of this section. Each distribution company formed as a result of this corporate reorganization shall offer retail access from generating companies to all customers as of this date. However, the department may extend this deadline if it determines that additional time is necessary to ensure that retail access can be extended to all customers on reasonable terms.

E. **Functional Unbundling of Generation, Transmission, Distribution; Divestiture of Generation Assets; Standard Offers for Service; Basic Service**

(1) Each electric company subject to this act shall transfer ownership of generation, transmission, and distribution facilities into separate affiliates of the electric company on or before January 1, 1998. The transmission facilities owned by the electric company shall be transferred to a transmission company at a price that shall equal the book value of the transmission facilities on the electric company's accounts net of depreciation and deferred taxes as of the date of transfer. The distribution facilities owned by an electric company shall be transferred to a distribution company at a price that shall equal the book value of the distribution facilities on the electric company's accounts net of depreciation and deferred taxes as of the date of transfer. The newly created distribution company shall be prohibited from selling electricity at retail, except as provided in subsections (E)(3) and (E)(4) of this section, and from owning, operating, or controlling transmission facilities, generating facilities, or marketing affiliates.

(2) The generation facilities owned by an electric company shall be transferred to an affiliate that is a generating company at a price that shall equal the book value of the generation facilities on the electric company's accounts net of depreciation and deferred taxes as of January 1, 1998. All generation facilities shall be subject to a valuation by a date determined by the department where such facilities are either sold or assessed by an actuary independent of the electric company or otherwise divested pursuant to subsection (G)(3) of this section, to determine the actual market price of such assets in a competitive market. A

generation company formed pursuant to this subsection shall be prohibited from acquiring new generation facilities as of January 1, 1998.

(3) Each distribution company formed pursuant to this act shall offer a standard service transition rate to those customers previously served by the company before restructuring who choose not to purchase electricity from a non-utility affiliated generating company after January 1, 1998. This service package shall be offered for a transition period of four years and shall require a distribution company to purchase electricity for these customers at competitive rates from a non-affiliated generating company as approved by the department. Further, this standard service transition rate shall allow for a customer to return to the standard service after once choosing retail access from a non-utility affiliated generation company, for a period of up to one year after the retail access date. In addition, all customers who have chosen retail access from a non-affiliated generation company but who otherwise require electric service within one year after the retail access date because of a failure of such a company to provide contracted service, shall be eligible for service through the distribution company's standard service rate. The department is authorized and directed to promulgate rules and regulations consistent with the provisions of this subsection.

(4) As of one year from the retail access date, each distribution company shall provide its customers with default service and shall offer a default service rate to its customers who have chosen retail access from a non-utility affiliated generation company but who require electric service because of a failure of such company to provide contracted service. The default service rate shall be equivalent to the average monthly spot market price of electricity. The department is authorized and directed to promulgate rules and regulations consistent with the provisions of this subsection.

(5) Any marketing company formed by an electric company shall be in the form of an affiliate of the electric company and shall be separate from any generation, transmission or distribution company affiliate of the electric company.

F. Demand Aggregation

(1) Municipal Aggregation

Any city or town is authorized to aggregate the electrical load of interested electricity consumers within its boundaries. Such city or town may group retail electric customers to broker or contract for electric power and energy services for such customers. Such city or town may enter into agreements for services to facilitate the sale and purchase of electric energy and other services. Such agreements may be entered into by a single city, town, county, or by a group of cities, towns or counties.

An aggregator operating under the provisions of this section shall not be considered a utility engaging in the wholesale purchase and resale of electric power. The provision of aggregated electric power and energy services as authorized by this subsection shall be regulated by any applicable laws or regulations that govern aggregated electric power and energy services in competitive markets.

A city or town may develop a plan for an aggregation program for its citizens. The plan shall provide for universal access, reliability, and equitable treatment of all classes of customers and shall meet any environmental and service standards established by state law or by the department of public utilities concerning aggregated service. The plan shall include an organizational structure of the program, operation and funding, rate setting and other costs to participants, the methods for entering and terminating agreements with other entities; the rights and responsibilities of program participants; and termination of the program.

A town may aggregate electrical load upon authorization by a majority vote of town meeting or town council. A city may authorize aggregation by a majority vote of the city council, with the approval of the mayor, or the city manager in a Plan D or Plan E city.

Cities or towns operating under the provisions of this subsection shall not be considered a utility engaging in the wholesale purchase and resale of electric power. Providing electric power or energy services to aggregated customers within a city or town or groups of cities or towns shall not be considered a wholesale utility transaction.

Participation by any retail customer in a city or town aggregation program shall be voluntary. Nothing in this section shall be construed as authorizing any city or town or any municipal retail load aggregator to restrict the ability of retail electric customers to service from any authorized provider thereof.

(2) Corporate Aggregation

Any for profit, not for profit corporation or quasi-public authority, organized under the laws of the commonwealth, is hereby authorized to establish a corporate retail load aggregator for the purpose of purchasing bulk electricity to serve affiliated corporations or affiliated business units organized under the laws of the commonwealth that are not sited within the boundaries of a municipal light department within the commonwealth.

A corporate retail load aggregator shall be empowered to purchase electricity from any entity authorized to sell electricity; to sell electricity at retail to any corporate affiliate or business unit located outside of the boundaries of communities served by municipal light departments within the commonwealth; and to enter into such contracts and agreements as are necessary or appropriate to provide such service. A corporate retail load aggregator shall be prohibited from engaging in the generation of electric power and from owning or operating any facilities for the transmission or distribution of electric power with the exception of meters.

A corporation may establish a corporate retail load aggregator upon authorization by a majority vote of its board of directors or principles, as the case may be. After a corporation has voted to establish a corporate retail load aggregator, the secretary of the corporation shall forthwith transmit to the department a certified copy thereof.

A corporation that has established a corporate retail load aggregator shall appoint, by a majority vote of its board of directors or, as the case may be, a manager or a managing board of the corporate retail load aggregator. Such manager or managing board shall have full charge of the operation and management of the corporate retail load aggregator, the entry into contracts and agreements pursuant to which power will be purchased and sold, the employment of attorneys, agents, and servants, the collections of bills, and the keeping of accounts. At the discretion of the corporation, corporate officials may serve as such manager or on such managing board. The compensation and term of office of such manager or managing board shall be fixed by the corporation.

Nothing in this section shall be construed as relieving any company which provides generation, transmission, or distribution of electricity or any combination thereof, from any obligation relative to the transmission and distribution of electricity to the corporation forming a corporate retail load aggregator.

Corporate load aggregators shall be subject to any rules and regulations promulgated by the department of public utilities through existing statute or through authorization by this act, including licensure requirements.

(3) **Non-Profit**

(a) Section 1 of Chapter 614 of the Acts of 1968 is hereby amended by inserting the words "and other charitable institutions" after the word "hospitals", each time that it appears.

(b) Definition (b) in section 3 of said chapter 614, as most recently amended by sections 123 and 124 of chapter 653 of the acts of 1989, is hereby amended by inserting at the end thereof the following:

; and, notwithstanding anything in this definition to the contrary, "project" may also include any capital or operating expenditure which may legally be made by any participating institution and the thing produced or acquired by such expenditure.

(c) Definition (g) of said section 3 of said chapter 614 is hereby further amended by inserting at the end thereof the following:--

; or any other nonprofit charitable institution in the commonwealth not otherwise eligible to participate under this act, provided however, that such other nonprofit charitable institution may only undertake the financing and construction or acquisition of a project or undertake the refunding or refinancing of obligations or of a mortgage or of advances to the extent that such projects, obligations, mortgages, or advances consist of or result from the purchase of energy or from energy conservation or related projects of such other nonprofit charitable institution; and provided further that such other nonprofit charitable institution participates in or is a member of a group power purchasing program organized and administered by or on behalf of the authority.

(d) Notwithstanding any general or special law to the contrary, any non-profit institution in the commonwealth or any agency, executive office, department, board, commission, bureau, division or authority of the commonwealth, including the executive, legislative and judicial branches of the commonwealth, or of any political subdivision thereof, or of any authority established by the general court to serve a public purpose, may, unless located within the boundaries of a community served by a municipal light department, participate in and become a member of any program organized and administered by or on behalf of any public instrumentality of the commonwealth or of any subsidiary organization thereof for the purpose of group purchasing of electricity, natural gas, telecommunications services or similar products.

(4) **Cooperatives**

(a) Organization

Any number of persons may associate themselves together as a cooperative, with or without capital stock, for the transaction of any lawful business associated with the purchase, acquisition, distribution, sale, resale, supply, and disposition of energy or energy-related services to wholesale or retail customers, subject to federal and state laws and regulations. Unless otherwise served by a municipal light plant constructed or acquired pursuant to chapter 164 of the general laws, any natural person, firm, corporation, business trust, partnership, public or private agency, not-for-profit organization or corporation, cooperative, or local municipality may become a member or shareholder of a cooperative. Such member or shareholder may thus access any services the cooperative has to offer and participate in the governance of the cooperative as provided in this subsection or by the bylaws of the cooperative.

(b) Powers of the Cooperative

Notwithstanding the provisions of any special or general law to the contrary, a cooperative may be formed for any purpose outlined in subsection (F)(4)(a) of this section that may lawfully be carried out by any other corporation, provided that a cooperative shall be organized and shall conduct its business primarily for the mutual benefit of its members as patrons of the cooperative. A

cooperative shall have all of the powers of a natural person, including, the power to participate with others in any partnership, joint venture or other association, transaction, or arrangement of any kind.

In addition, each cooperative subject to this chapter shall have the following powers:

(i) To have perpetual succession by its corporate name unless a limited period of duration is stated in the articles of incorporation;

(ii) To sue and be sued, complain, and defend its corporate name;

(iii) To have and use a corporate seal;

(iv) To purchase, take, receive, lease, or otherwise acquire, own, hold, improve, use, and deal in and with real or personal property or any interest therein, whenever situated;

(v) To sell, convey, mortgage, pledge, lease, exchange, transfer, or otherwise dispose of all or any part of its property and assets;

(vi) To purchase, take, receive, subscribe for, or otherwise acquire, own, hold, vote, use, employ, sell, mortgage, lend, pledge, or otherwise dispose of , use, and deal in and with shares or other interest in, or obligations of, other domestic or foreign corporations, associations, partnerships or individuals, or direct or indirect obligations of the United States or any other government, state, territory, governmental district or municipality, or any instrumentality thereof;

(vii) To make contracts and incur liabilities, borrow money at rates of interest the cooperative may determine, issue notes, bonds, certificates of indebtedness, and other obligations, receive funds from members and pay interest thereon, issue capital stock and certificates representing equity interests in assets, allocate earnings and losses at the times and in the manner the articles of incorporation or bylaws or other contract specify, create book credits, capital funds, and reserves, and secure obligations by mortgage or pledge of any of its property, franchises and income;

(viii) To lend money for corporate purposes, invest and reinvest funds, and take and hold real and personal property as security for the payment of funds loaned or invested;

(ix) To conduct business, carry on operations, have offices, and exercise the powers granted by this subsection, within or without this commonwealth;

(x) To elect or appoint officers and agents of the corporation, define their duties, and fix their compensation;

(xi) To make and alter bylaws, not inconsistent with its articles of incorporation or with the laws of this commonwealth, for the administration and regulation of the affairs of the cooperative;

(xii) To make donations for the public welfare or for charitable, scientific, or educational purposes;

(xiii) To pay pensions and establish pension plans, pension trusts, profit-sharing plans, stock bonus plans, stock option plans, and other incentive plans for any or all of its directors, officers, and employees;

(xiv) To be a partner, member, associate or manager of any partnership, joint venture, trust, or other enterprise;

(xv) To cease corporate activities and surrender its corporate franchise;

(xvi) To purchase, acquire, distribute, sell, resell, supply and dispose or energy or other services;

(xvii) To purchase, acquire, distribute, sell, resell, supply, and provide any energy and/or energy-related services to wholesale or retail customers;

(xviii) To have access on comparable terms to energy transportation systems for delivery of energy to its members and other customers;

(xix) to sell electricity to any consumer, including, but not limited to a consumer that receives electric distribution, transmission or other services from an entity other than the cooperative organized under subsection (4)(a), other than consumers served by municipal light plants, that is selling such electricy to such consumer, and an entity providing such distribution, transimssion or other services shall provide non-

discriminatory access and pricing for the use of its property and services and shall otherwise facilitate such transactions.

(xx) To contract with natural persons, firms, corporations, business trusts, partnerships, public and private agencies, not-for-profit organizations and corporations, other cooperatives, and local municipalities to accomplish any purposes of the cooperative;

(xxi) To have and exercise all powers necessary or convenient to effect its purposes.

(c) Election and appointment of cooperative directors

Cooperatives shall be managed by a board of not less than three directors. the directors shall be elected by and from the members of the cooperative at such time, in such manner, and for such term of office as the bylaws may prescribe and shall hold office during the term for which they were elected any until their successors are elected and qualified. Any vacancy occurring in the board of directors, and any directorship to be filled by reason of an increase in the number of directors, may be filled by the board of directors unless the articles of incorporation or the bylaws provide that a vacancy or directorship so created shall be filled in some other manner. A director elected or appointed to fill a vacancy shall be elected or appointed for the unexpired term of the predecessor in office.

(d) Bylaws of the cooperative

Any cooperative subject to this chapter may pass bylaws to govern itself in the carrying out of the provisions of this subsection which are not inconsistent with the provisions of this subsection.

(e) Voting by cooperative members

The right of a member to vote may be limited, enlarged, or denied to the extent specified in the articles of incorporation or bylaws. Unless so limited, enlarged, or denied, each member shall be entitled to one vote on each matter submitted to a vote of members.

(f) Immunity from liability of cooperative board members and officers

A member of the board of directors or an officer of any cooperative subject to this subsection shall have immunity from liability equivalent to that granted to directors and officers of for-profit corporations in this state. Except for debts lawfully contracted between a member and the cooperative, no member shall be

liable for the debts of the cooperative to an amount exceeding the sum remaining unpaid on his or her membership fee or subscription to capital stock.

G. **Rates/Recovery of Stranded Costs**

(1) The department may, pursuant to this section, authorize a distribution company to recover eligible stranded costs if:

(a) the company has filed on or before October 1, 1997, a plan to provide all of its retail customers the ability to purchase electricity from an alternative supplier or generation company as of January 1, 1998; and

(b) the plan provides a standard service transition rate required under subsection (E)(3) of this section which, together with transmission, distribution and stranded cost access charges, produces and initial one year rate reduction for all retail customers of at least ten percent (10%) from the average, undiscounted rates for the sale of electricity in effect during the third quarter of 1996 or such other period as the department of public utilities may determine to be representative of 1996 rates. As of January 1, 1999, the total, average rates for customers purchasing electricity under the standard service transition rate shall be subject to an inflation cap through the remainder of the standard offer period. The ten percent rate reduction can be achieved through financing, operational or other savings, including savings from securitization under section three of this act with the proviso that utilization of securitization is subject to approval by the department after satisfactory mitigation efforts as provided by section 5(G)(3) of this act. The calculation and implementation of the rate reduction and the inflation cap shall be subject to adjustment, review, and approval in accordance with procedures and rules to be established by the department, which shall, at a minimum require that subsequent to the initial ten percent reduction required under this subsection rates during the standard service transition rate period increase no more than they would have under the prior system of rate regulation.

(2) Distribution companies shall be allowed, subject to department approval and the provisions of this act, to collect a charge for net, non-mitigable past costs incurred under a regulated system which, subject to the conditions outlined in this subsection, are above market value in a deregulated electric power market and are therefore "stranded costs". Eligible stranded costs shall be defined are those costs

incurred by investor-owned electric companies while such companies were doing business as fully regulated entities, such costs including (1) the amount of any unrecovered fixed cost determined by the department to have been incurred prudently associated with producing electricity from existing generation facilities that shall not be recoverable through the competitive market price for generation, subject to approval by the department and subject to mitigation as provided in subsection (G)(3) of this section; (2) liabilities for future decommissioning associated with nuclear power plants; (3) the unrecovered amount of the reported book balances related to generation of existing department-approved regulatory assets, as defined below, net of the generation related balance of any regulatory liabilities and other balances resulting from excess collections in earlier periods such as unamortized investment tax credits, self-insurnace reserves, and any excess pension fund balances, and (4) the amount by which the costs of existing contractual commitments for purchased power exceeds the competitive market price for such power subject to subsection (G)(7) of this section. However, stranded costs shall not include any costs incurred after August 16, 1995, except those incurred pursuant to subsection (G)(6) of this section, and shall be mitigated pursuant to subsection (G)(3) of this section. Further, for purposes of this section the term "regulatory assets" refers to the unrecoverd balance of deferred costs that otherwise would have been recognized in the period in which they were incurred bu that have been approved apecifically for deferral and recovery later by the regulatory authority having appropriate ratemaking jurisdiction. The department, after an initial audit authorized through subsection (J) of this section, shall promulgate rules and regulations consistent with the provisions of this subsection.

(3) The department is hereby authorized and directed to require all electric companies to mitigate any potential stranded costs before approval of any requests for stranded cost recovery. Allowed mitigation efforts shall include but not be limited to divestiture of non-nuclear generation facilities and renegotiation of existing purchase power contracts. Electric companies shall be encouraged to divest their portfolio of all non-nuclear generation assets within one year of January 1, 1998, or the starting date for retail access, whichever is later. However, an electric company which fails to divest its non-nuclear assets before January, 1, 2000, or two years from the actual retail access date, whichever is later, may not be eligible to benefit from the issuance of rate reduction bonds under the provisions of section 3 of this act,

subject to determination by the department. As of January 1, 2000, any remaining generation facilities shall be subject to assessment by an independent auditor to determine the market value of such assets, such assessment subject to approval by the department. Further, electric companies shall be encouraged to mitigate stranded costs associated with long term purchase power contracts. Any stranded costs recovered by a distribution company shall be further mitigated by netting against such above-market costs any below market assets other than those associated with distribution or transmission that are owned by the company.

The department shall require a reconciliation of projected stranded costs to actual stranded costs by January 1, 2000, or within two years of the actual retail access date, whichever is later, and for every two years thereafter through January 1, 2008.

(4) Such cost recovery shall be amortized for a period of not more than 10 years beginning on January 1, 1998 and may be recovered through a non-bypassable access charge paid by all customers of a distribution company. Amortization of stranded cost recovery may be allowed for a period less than 10 years from January 1, 1998, but in no case shall such amortization result in an increase in rates for any class of customer of an electric company over rates in effect as of December 31, 1997 for that company. Effective January 1, 2008 or 10 years after the starting date for retail access, whichever is later, there shall be no allowance for stranded cost recovery in any rate charged by any transmission or distribution company.

(5) The department is hereby authorized and directed to allow any stranded costs recovered from ratepayers to be paid through a non-bypassable stranded cost access charge collected by the ratepayer's distribution company and deposited into the Massachusetts Electricity Deregulation Public Trust formed pursuant to section three of this act. For each electric company submitting requests for stranded cost recovery to the department, upon initial determination of allowed stranded cost recovery the department shall cap each stranded cost access charge allowed. Any access charge collected shall be used solely for the specific purposes of repaying sunk costs associated with above-market generation facilities, amounts by which the costs of existing contractual commitments for purchased power exceeds the competitive market price for such power, renegotiation or buying out of above market purchase power contracts,

subject to mitigation review and approval by the department, according to subsection (G)(3) of this section, contributions to existing decommissioning funds, payment of costs associated with approved regulatory assets as defined in subsection (G)(2) of this section, funding employee-related benefits as defined in subsection (G)(6) of this section, funding property tax assessments and payments-in-lieu of taxation pursuant to section seven of this act, or supporting rate-reduction bonds issued pursuant to section three of this act, such bonds subject to further limitations on their use subject to the provisions of section three.

Notwithstanding the provisions of any special or general law to the contrary, no customer shall be allowed to bypass this access charge including, but not limted to instances where the customer reduces purchases by the operation of on-site generation or co-generation equipment which was not fully operational before August 16, 1995. A customer that reduces purchase through the operation of such equipment shall be subject to an "exit charge" payable to the customer's distribution company. Such exit charge shall be equal to the expected value of the access charge payments the customer would have paid but for the operation of such equipment and shall be determined by the department based on criteria promulgated through rules and regulations.

The department is further authorized to determine whether or to what extent the stranded cost access charges for all distribution companies should be partially blended into a uniform statewide rate to qualify any bonds authorized through section three of this act for possible exemption from federal taxation. In no case, however, shall any blended rate result in cross-subsidization of stranded cost access charges between electric companies and in no case shall any partially blended rate be higher than two cents per kilowatt hour or the lowest stranded cost access charge authorized for any electric company as of July 1, 1999, whichever is lower.

(6) Distribution companies shall be allowed to recover through the access charge certain costs incurred after August 16, 1995. These costs shall be limited to those costs incurred to fund severance pay, retraining expenses, early/enhanced retirement, outplacement, health care coverage, and job retention programs, provided that said costs result either from collective bargaining, or in the case where no collective bargaining relationship exists, from company policy. However, these costs shall only

be eligible for recovery for seven years after January 1, 1998, or the actual starting date for retail competition, whichever is later, and shall further be limited to costs for employees not performing senior supervisory duties or professional duties associated with regulatory functions, nor for employees who are officers of the corporation. Further, distribution companies shall be allowed to recover costs associated with any property tax or payments-in-lieu of taxes to be paid to cities and towns siting generation facilities affiliated with or formerly affiliated with the distribution company before divestiture, for up to ten years after January 1, 1998, or the actual starting date for retail competition, whichever is later, subject to section seven of this act.

(7) In order to mitigate the above market costs associated with purchase power contracts in effect before August 16, 1995, electric companies shall make good-faith efforts to renegotiate such contracts. Further, any seller under such a contract or any company in any way affiliated with any such seller except generation companies which burn trash to produce energy, contracted to supply power to an electric company through a purchase power contract in effect prior to August 16, 1995 shall not be granted a license to sell power directly to retail customers, or to entities purchasing power on behalf of retail customers, unless each of that company's purchase power contracts has an aggregate value in cents per kilowatt hour of no more than 10% above the average spot market price of electricity in cents per kilowatt hour determined as of six months from January 1, 1998, or the start of retail access, whichever is later. Further, such generation company, affiliate, parent or subsidiary, notwithstanding the provisions of section 7 of this act, shall not be eligible for an exemption under section five of chapter 59 of the general laws unless and until such aforementioned contracts are renegotiated according to this subsection. The department shall promulgate rules and regulations governing approval of renegotiation efforts as a condition of licensure of generation facilities.

(8) The department shall notify the Joint Committees on Government Regulations and Energy, respectively, upon the granting of stranded cost recovery to any electric company pursuant to this section. Such notification shall be forwarded within 48 hours of such a determination to the above joint committees and the committees may either jointly or separately hold public hearings on such a determination for the purpose of updating the legislature on the methodology used by the department to

determine allowed stranded cost recovery and the results of mitigation measures agreed to by electric companies to lower their stranded costs.

H. Performance Based Ratemaking

The department is hereby authorized to approve and/or require performance based rates for each distribution company. The department shall promulgate rules and regulations pursuant to this subsection.

I. Information on bills

As of September 1, 1997, electric bills shall be unbundled to separately reflect the rates charged for generation, transmission, distribution. Access charges shall be reflected separately on bills as of January 1, 1998, or the starting date for retail access, whichever is later. Electric bills may reflect the total costs of services, without breakdown for type of service, in addition to, but not instead of, separately reflected rates for generation, transmission, distribution, and access charges as of January 1, 1998. Further, generation companies and distribution companies shall be required to disclose on bills the fuel type and location of the generation source or sources used to supply electricity sold to the customer. The department is hereby directed to promulgate rules and regulations to implement the provisions of this subsection.

J. Audit of department records on electric company costs

An initial audit of electric company records on file at the department shall be completed by the state auditor before any order is promulgated which authorizes recovery of stranded costs for any electric company doing business in the commonwealth. Such audit shall include an accounting of all costs eligible for stranded cost recovery under the provisions of subsection (G)(2) of this section incurred prior to August 16, 1995.

SECTION 6. SITING REFORM

A. Section 69G of Chapter 164 of the General Laws, as appearing in the 1994 Official Edition, is hereby amended by striking out lines 11 through 12 and replacing them with the following:--

"Certificate", a certificate of environmental impact and public interest, as provided for in sections sixty-nine K and sixty-nine K 1/2.

B. Section 69G of Chapter 164 of the General Laws, as so appearing, is hereby further amended by striking out lines 29 through 43 in their entirety and replacing them with the following:--

"Facility", (1) a generating facility, as defined below; (2) any new electric transmission line having a design rating of sixty-nine kilovolts or more and which is one mile or more in length except reconductoring or rebuilding of existing transmission lines at the same voltage; (3) any ancillary structure which is an integral part of the operation of any transmission line which is a facility; (4) any unit, including associated buildings and structures, designed for, or capable of, the manufacture or storage of gas, except such units below a minimum threshold size as established by regulation; and (5) any new pipeline for the transmission of gas having a normal operating pressure in excess of one hundred pounds per square inch gauge which is greater than one mile in length except restructuring, rebuilding, or relaying of existing transmission lines of the same capacity.

C.. Section 69G of Chapter 164 of the General Laws, as so appearing, is hereby amended by inserting between lines 55 and 56 thereof the following:--

"Generating facility", any bulk generating unit, designed for, or capable of, operating at a gross capacity of one hundred megawatts or more, including associated buildings, ancillary structures, transmission and pipeline interconnections that are not otherwise facilities, and fuel storage facilities.

D. Section 69H of Chapter 164 of the General Laws, as so appearing, is hereby amended by striking out lines 1 through 6 thereof in their entirety and inserting in place thereof the following:--

Section 69H. There is hereby established an energy facilities siting board within the department, but not under the supervision or control of the department. Said board shall implement the provisions contained in sections sixty-nine H to sixty-nine Q, inclusive, so as to provide a necessary energy supply for the commonwealth with a minimum impact on the environment at the lowest possible cost. To accomplish this, the board shall review the need for, cost of, and environmental impacts of transmission lines, natural gas pipelines, facilities for the manufacture and storage of gas, and oil facilities; but shall review only the environmental impacts of generating facilities, consistent with the

commonwealth's policy of allowing market forces to determine the need for and cost of such facilities. Such reviews shall be conducted consistent with section sixty-nine J 1/4 for generating facilities, and with section sixty-nine J for all other facilities.

E.. Section 69J of Chapter 164 of the General Laws, as so appearing, is hereby further amended by inserting at the end thereof the following:--

"The provisions of this section shall not apply in the case of a petition to construct a generating facility, which shall be subject to the provisions of section sixty-nine J 1/4.

F.. Said Chapter 164 of the General Laws, as so appearing, is hereby further amended by inserting the following new section:--

Section 69J 1/4. No applicant shall commence construction of a generating facility unless a petition for approval of construction of that generating facility has been approved by the board. In addition, no state or local agency shall issue a construction permit for any such generating facility unless the petition to construct such generating facility has been approved by the board pursuant to this section.

To streamline its review of petitions to construct generating facilities that have state of the art environmental performance characteristics, the board periodically shall conduct a rulemaking to establish a technology performance standard for generating facilities emissions, including but not limited to emissions of sulfur dioxide, nitrogen oxides, particulate matter, fine particulates, carbon monoxide, and volatile organic compounds. Such standard shall reflect emissions rates that are achievable by state of the art fossil fuel generating and control technologies, as demonstrated by air permits for construction that have been issued by the department of environmental protection and by other regulatory agencies in comparable northeastern states. in setting the technology performance standard, the board also may consider the expertise of other state and federal agencies, recognized sources of industry information, and any additional sources that may assist the board. The technology performance standard shall be used solely to determine whether a petition to construct a generating facility must include information regarding other fossil fuel generation technologies. The promulgation of this standard shall not in any

way supersede or impair the authority of the department of environmental protection with respect to these or other facilities.

A petition to construct a generating facility shall include, in such form and detail as the board shall from time to time prescribe, the following information: (1) a description of the proposed generating facility, including any ancillary structures and related facilities; (2) a description of the environmental impacts and the costs associated with the mitigation, control or reduction of the environmental impacts of the proposed generating facility, (3) a description of the project development and site selection process used in choosing the design and location of the proposed generating facility; (4) either, (a) evidence that the expected emissions from the facility meet the technology performance standard in effect at the time of filing, or (b) a description of the environmental impacts, costs, and reliability of other fossil fuel generating technologies, and an explanation of why the proposed technology was chosen; and (5) any other information necessary to demonstrate that the generating facility meets the requirements for approval specified in this section. The board shall after public notice and a period for comment be empowered to issue and revise its own list of guidelines. Sufficient data shall be required from the applicant by these guidelines to enable the board to review the land use impact, water resource impact, wetlands impact, air quality impact, solid waste impact, radiation impact, visual impact, and noise impact of the proposed generating facility. These guidelines shall not, however, require any data related to the necessity or cost of the proposed generating facility, except for data related to the costs associated with the mitigation, control or reduction of the environmental impacts of the proposed generating facility, and, if the proposed facility does not meet the technology performance standard in effect at the time of filing, date related to the costs, including costs associated with the mitigation, control or reduction of environmental impacts, of other fossil fuel generating technologies.

Within two months of the filing of a petition to construct a generating facility, the board shall conduct a public hearing in each locality in which the generating facility would be located. In addition, the board shall conduct public evidentiary hearings on every petition to construct a generating facility within six months of the filing thereof. Such evidentiary hearings shall be adjudicatory proceedings under the provisions of chapter thirty A.

The board shall within twelve months from the date of filing approve a petition to construct a generating facility if the board determines that the petition meets the following requirements: (1) the description of the proposed generating facility and its environmental impacts are substantially accurate and complete; (2) the site selection process used has ensured that the applicant has not overlooked a clearly superior location for such generating facility; (3) plans for construction of the proposed generating facility are consistent with current health and environmental protection policies of the commonwealth, and with such energy policies as are adopted by the commonwealth for the specific purpose of guiding the decisions of the board; and (4) such plans minimize the environmental impacts consistent with the minimization of costs associated with mitigation, control and reduction of the environmental impacts of the proposed generating facility; and (5) if the petitioner was required to provide information on other fossil fuel generating technologies, the construct of the proposed generating facility on balance contributes to a reliable, low-cost, divers regional energy supply with minimal environmental impacts. Nothing in this chapter shall be construed as requiring the board to make findings regarding the need for, the cost of, alternatives to, or alternative sites for a generating facility; however, the board may at its discretion evaluate a noticed alternative site for a generating facility if the applicant requests such an evaluation, or if such an evaluation is an efficient method of administering an alternative site review required by another state or local agency. In addition, nothing in this chapter shall be construed as requiring the board to make findings regarding alternative generating technologies for a proposed generating facility whose expected emissions meet the technology performance standard in effect at the time of filing.

If the board determines the standards set forth above have not been met, it shall within twelve months of the date of filing reject in whole or in part the petition, setting forth in writing its reasons for such rejection, or approve the petition subject to stated conditions. In the event of rejection or conditional approval, the applicant may within six months submit an amended petition. Public and evidentiary hearings on the amended petition shall be held on the same terms and conditions applicable to the original petition.

Upon fulfilling the requirements of this section, a generating facility shall be deemed to contribute to a necessary energy supply for the commonwealth with a minimum impact on the environment at the lowest possible cost.

If the board approves a petition to construct a generating facility, the approval shall have no bearing or precedential effect upon any department proceeding regarding the recovery of costs associated with that generating facility or upon any proceeding under section ninety-four A of chapter 164.

G. Section 69 K of Chapter 164 of the General Laws, as so appearing, is hereby further amended in lines 3 and 27 by striking the word "need" and replacing it with the word "interest".

H. Said Section 69 K of Chapter 164 of the General Laws, as so appearing, is hereby further amended by inserting at the end thereof the following:--

"The provisions of this section shall not apply in the case of a petition for a certificate with respect to a generating facility, which shall be subject to the provisions of section sixty-nine K 1/2."

I. Said Chapter 164 of the General Laws, as so appearing, is hereby further amended by inserting the following:--

Section 69K 1/2. Any applicant that proposes to construct or operate a generating facility in the commonwealth may petition the board for a certificate of environmental impact and public interest with respect to such generating facility. The board shall consider such petition providing: the applicant is prevented from building a generating facility because it cannot meet standards imposed by a state or local agency with reasonable and commercially available equipment or because the processing or granting by a state or local agency of any approval, consent, permit, or certificate has been unduly delayed for any reason, including the preparation and publication of any environmental impact report required by section sixty-two of chapter thirty; or the applicant believes there are inconsistencies among resource use permits issued by such state or local agencies; or the applicant believes that a nonregulatory issue or condition has been raised or imposed by such state or local agencies such as but not limited to aesthetics and recreation;

or the generating facility cannot be constructed due to any disapprovals, conditions, or denials by a state or local agency or body except with respect to any lands or interests therein, excluding public ways, owned or managed by any state agency or local government; or the facility cannot be constructed because of delays caused by the appeal of any approval, consent, permit, or certificate.

In addition to the foregoing determinations, the board shall, upon petition, consider an application for a certificate of environmental impact and public interest if it finds that any state or local agency has imposed a burdensome condition or limitation on any license or permit which has a substantial impact on the board's responsibilities as set forth in section sixty-nine H.

Any generating facility, with respect to which a certificate is issued by the board, shall thereafter be constructed, maintained, and operated in conformity with such certificate and any terms and conditions contained therein.

A certificate shall be issued only in accordance with the provisions of sections sixty-nine K to sixty-nine O 1/2, inclusive. Notwithstanding the provisions of any other law to the contrary, a certificate may be so issued and when so issued, no state agency or local government shall require any approval, consent, permit, certificate or condition for the construction, operation or maintenance of the generating facility with respect to which the certificate is issued and no state agency or local government shall impose or enforce any law, ordinance, by-law, rule or regulation nor take any action nor fail to take any action which would delay or prevent the construction, operation or maintenance of such generating facility; provided, however, that the board shall not issue a certificate the effect of which would be to grant or modify a permit, approval or authorization which, if so granted or modified by the appropriate state or local agency, would be invalid because of a conflict with applicable federal water or air standards or requirements. A certificate, if issued, shall be in the form or a composite of all individual permits, approvals or authorizations which would otherwise be necessary for the construction and operation of the generating facility and that portion of the certificate which relates to subject matters within the jurisdiction of a state or local agency shall be enforced by said agency under the other applicable laws of the commonwealth as if it had been directly granted by the said agency.

Each national pollutant discharge elimination system permit issued by the board under this chapter shall have a fixed term which shall not exceed five years and which shall commence to run when the certificate is issued.

A certificate may be transferred to any other electric company by the holder thereof, subject to the terms and conditions contained therein.

The board may amend the terms and conditions of a certificate in accordance with the requirement of subsection E of section sixty-nine L 1/2.

J. Section 69L of chapter 164 of the General Laws, as so appearing, is hereby amended by inserting in line 1 the following:--

"Except in the case of an application for a certificate with respect to a generating facility, which shall be subject to the provisions of section sixty-nine L 1/2,"

K. Section Chapter 164 of the General Laws, as so appearing, is hereby further amended by inserting the following:--

Section 69 L 1/2. A. An applicant for a certificate pursuant to section sixty-nine K 1/2 above, shall file with the board a petition, in such form as the board may prescribe, containing the following information:

(1) A description of the location of the generating facility to be constructed or operated thereon.

(2) A summary of the studies which the applicant has made of the environmental impact of the generating facility and a statement of the reasons for its choice of the location.

(3) A copy of the petition for construction of a generating facility approved under the provisions of section sixty-nine J 1/4. This requirement may be waived by the board for emergency or unforeseen conditions which may jeopardize the health and safety of the public.

(4) A statement setting forth the reasons for the application for the certificate, which statement shall include the following: all licenses, permits and other regulatory approvals required by law

for the construction or operation of the generating facility which have been granted; a representation as to the good faith effort made by the applicant to obtain from state agencies and local governments the licenses, permits and other regulatory approvals required by law for construction or operation of the generating facility; either, a representation as to the inability, if any, of the applicant to comply with any law, ordinance, by-law, rule and regulation affecting the construction or operation of the generating facility; or a representation as the applicant's inability to proceed with the construction or operation of the generating facility by reason of the denial, delay, or imposition of a burdensome condition in issuing specified licenses, permits or approvals; and such other information as the applicant may deem relevant or the board may by regulation require.

(5) A copy or copies of said information, studies and other pertinent information shall be filed and made available for public inspection and copying, except that the board shall not permit disclosure, other than to another government agency concerned with the same matter, of any information, other than data pertaining to the nature or constituency of any water or air discharge, obtained by or submitted to the board pursuant to the provisions of sections sixty-nine H to sixty-nine R, inclusive, upon a showing, satisfactory to a majority of the board, that such information if made public would divulge methods or processes entitled to protection as trade secrets of any person.

B. Each petition shall be accompanied by an affidavit of the applicant, certifying that:

(1) A copy of the petition and a notice as to the date on which the petition is to be filed have been served on each of the following: the mayor of each city and the board of selectmen of each town in which any part of the proposed generating facility is to be located, the secretary of each executive office and the attorney general.

(2) Public notice thereof containing a summary of the petition and the date on which notice is to be filed was given by publication, in such manner as the board may be regulation provide.

C. Failure to give such service or notice may be cured pursuant to an order of the board subsequent to the filing of the petition. The board may further order additional service and notice on such other persons as it deems appropriate.

D. Each petition may be amended by the applicant at any time, subject to such reasonable requirements of notice as the board may impose.

E. A petition for an amendment of a certificate shall be in such form and subject to such requirements of notice and hearings as the board may provide, consistent with the nature and extent of the proposed amendment.

L. Section 69M of chapter 164 of the General Laws, as so appearing, is hereby further amended by inserting in lines 2 and 5 after the words "section sixty-nine L" the following:--

"or section sixty-nine L1/2, whichever is applicable."

M. Section 69N of chapter 164 of the General Laws, as so appearing, is hereby further amended by inserting in lines 4 and 6 after the words "section sixty-nine L" the following:-

"or section sixty-nine L 1/2, whichever is applicable."

N. Section 69O of chapter 164 of the General Laws, as so appearing, is hereby amended in line 2 by inserting after the word "petition" the following:--

"for a certificate pursuant to section sixty-nine K"

O. Said section 69O of chapter 164 of the General Laws, as so appearing, is hereby further amended by inserting at the end thereof, the following:

"The provisions of this section shall not apply in the case of a petition for a certificate with respect to a generating facility filed pursuant to section sixty-nine K1/2, which shall be subject to the provisions of section sixty-nine O 1/2."

P. Said chapter 164 of the General Laws, as so appearing, is hereby further amended by inserting the following:--

Section O 1/2. As expeditiously as possible but in no event later than six months from the date of filing a petition for a certificate with regard to a generating facility pursuant to section sixty-nine K1/2, the board shall by a majority vote render a decision upon the petition either by denying the petition or by granting the petition, or by granting the petition subject to such terms and conditions as the board may determine. Neither the board nor any other person shall be bound by the requirements of section sixty-one to sixty-two H, inclusive, of chapter thirty to the extent that compliance with said requirements will prevent the board from rendering a decision upon the petition within the time limits of the section.

A certificate shall be issued only if the board determines that the issues raised by state agencies or local governments regarding the proposed generating facility have been addressed in a comprehensive manner by the board either in its approval of said generating facility under section 69 J 1/2 or it its review under section sixty-nine K 1/2. The board shall make its decision in writing and shall include therein its findings and opinions with respect to the following:

(1) The compatibility of the generating facility with considerations of environmental protection, public health and public safety;

(2) The extent to which construction and operation of the generating facility will fail to conform with existing state and local laws, ordinances, by-laws, rules and regulations and reasonableness of exemption thereunder, if any, consistent with the implementation of the energy policies contained in this chapter; and

(3) The public interest or convenience requiring construction and operation of the generating facility.

Q. Section 69R of chapter 164 of the General Laws, as so appearing, is hereby amended by striking lines 1-9 and inserting in place thereof the following:--

Section 69R. Any electric or gas company may petition the department for the right to exercise the power of eminent domain with respect to the facility or facilities specified and contained in a petition submitted in accordance with section sixty-nine J or a bulk power supply substation if such electric or gas company is unable to reach agreement with the owners of land for the acquisition of any necessary estate or interest in land. The applicant shall forward at the time of filing such petition a copy thereof to each city and town affected.

R. Said section 69R of chapter 164, as so appearing, is hereby further amended in lines 19-20 by striking the words "the community in which the greater portion of the unit is located" and inserting in place thereof the words:--

"in the community in which the land to be taken is located. For facilities involving takings in several communities, a public hearing or hearings shall be held in communities in proximity to the land to be taken, as determined by the department.

S. Said section 69R of chapter 164, as so appearing, is hereby further amended by striking lines 37-43 and inserting in place thereof the following:--

"This section should not be construed as abrogating the department's jurisdiction described in section seventy-two in respect to transmission lines or the department's jurisdiction described in sections seventy-five B through seventy-five G, inclusive, in respect to natural gas transmission lines."

T. Any petition to construct a generating facility filed pursuant to section sixty-nine J of chapter one hundred sixty-four of the General Laws, and which has been the subject of a local public hearing prior to the effective date of this act, shall be subject to the provisions of section sixty-nine J, rather than section sixty-nine J 1/4, of said chapter.

U. A study commission is hereby authorized and directed to jointly develop a procedure to allow individuals and corporations applying to site generation facilities a means of coordinating and consolidating applications for this purpose between and among the board and the department of environmental protection, including, but not limited to, a means of "one-stop shopping", so-called, to acquire necessary permits or certificates. Such commission shall include the commissioner of the department of environmental protection, or a designee, the chairman of the department of public utilities, or a designee, and a member of the energy facilities siting board. Said study commission shall issue a final report to the Joint Committees on Energy, Government Regulations and Natural Resources, respectively, on or before January 31, 1998.

V. Section 69I of chapter 164 is hereby amended by adding the following after the words "electric company" in line 5:--

or generation company, as defined in section 1,

W. The department of public utilities is hereby authorized and directed to study the issue of application fees paid by developers to the energy facilities siting board and their correlation to the board's revised procedures under this section in reviewing such applications. The department's study shall include but not be limited to recommendations, if any, on reducing the application fee paid by developers to the board in light of the board's lessened standard review of such applications pursuant to this act, and

SECTION 7. PROPERTY TAX ASSESSMENT PROTECTIONS FOR MUNICIPALITIES

A. Notwithstanding the provisions of any general or special law to the contrary, any electric company that currently generates electricity as defined in section one of chapter one hundred and sixty four of the General Laws or distribution company as defined in this act which is authorized by the commonwealth or the department of public utilities to recover stranded costs associated with past investments in generation facilities, or any generation company as defined in this act or such company's affiliate, subsidiary or parent company which currently has no express or implied agreement for payments in lieu of taxes to cities or towns siting the company's generation facilities shall be required to provide a payment in lieu of taxes to any city or town in which an affiliated generation facility, as defined in

subsection one of section five of this act, or part thereof, is located and has been devalued for property tax payment purposes. Said payments shall offset any reduction of property tax monies paid to a city or town as a result of any devaluation of said generation facility and shall be paid for a period of ten years. For fiscal year 1998, such payments shall be equivalent to the local property tax value of the property in fiscal year nineteen ninety-seven. For the purposes of this section "fiscal year" shall be determined by chapter forty-four, sections fifty-six and fifty-six A of the general laws. Said future payments shall be calculated as follows:

(1) From fiscal year nineteen ninety-nine through fiscal year two thousand seven such payment shall be equivalent to the fair cash value of the property determined as of January first of each year multiplied by the applicable commercial tax rate for year each fiscal year, plus an amount calculated by the following formula:

(a) For fiscal year nineteen ninety-nine, the calculated amount shall be equivalent to ninety percent of the difference between the local property tax value of the property as of January first, nineteen ninety seven and the fair cash value of the property as of January first, ninety-nine, multiplied by the applicable commercial tax rate for the fiscal year nineteen ninety-nine;

(b) For fiscal year two thousand, the calculated amount shall be equivalent to eighty percent of the difference between the local property tax value of the property as of January first, nineteen ninety seven and the fair cash value of the property as of January first, two thousand, multiplied by the applicable commercial tax rate for the fiscal year two thousand;

(c) For fiscal year two thousand one, the calculated amount shall be equivalent to seventy percent of the difference between the local property tax value of the property as of January first, nineteen ninety seven and the fair cash value of the property as of January first, two thousand one, multiplied by the applicable commercial tax rate for the fiscal year two thousand one;

(d) For fiscal year two thousand two, the calculated amount shall be equivalent to sixty percent of the difference between the local property tax value of the property as of January first, nineteen ninety seven and the fair cash value of the property as of January first, two thousand two, multiplied by the applicable commercial tax rate for the fiscal year two thousand two;

(e) For fiscal year two thousand three, the calculated amount shall be equivalent to fifty percent of the difference between the local property tax value of the property as of January first, nineteen ninety seven and the fair cash value of the property as of January first, two thousand three, multiplied by the applicable commercial tax rate for the fiscal year two thousand three;

(f) For fiscal year two thousand four, the calculated amount shall be equivalent to forty percent of the difference between the local property tax value of the property as of January first, nineteen ninety seven and the fair cash value of the property as of January first, two thousand four, multiplied by the applicable commercial tax rate for the fiscal year two thousand four;

(g) For fiscal year two thousand five, the calculated amount shall be equivalent to thirty percent of the difference between the local property tax value of the property as of January first, nineteen ninety seven and the fair cash value of the property as of January first, two thousand five, multiplied by the applicable commercial tax rate for the fiscal year two thousand five;

(h) For fiscal year two thousand six, the calculated amount shall be equivalent to twenty percent of the difference between the local property tax value of the property as of January first, nineteen ninety seven and the fair cash value of the property as of January first, two thousand six, multiplied by the applicable commercial tax rate for the fiscal year two thousand six;

(i) For fiscal year two thousand seven, the calculated amount shall be equivalent to ten percent of the difference between the local property tax value of the property as of January first, nineteen ninety seven and the fair cash value of the property as of January first, two thousand seven, multiplied by the applicable commercial tax rate for the fiscal year two thousand seven.

For those generation facilities which change ownership during fiscal years nineteen ninety eight and two thousand seven, the current owners of facilities subject to this section shall only be responsible for payments in lieu of taxes based on the above formula minus the fair cash value of the property, which shall be paid by the new owners of the facilities.

B. Paragraph (3) of clause 16 of section 5 of chapter 59 of the General Laws, as appearing in the 1994 Official Edition, is hereby amended by adding, in line 257, after the words "wires and pipes", the following words:--

provided, however, that no property, except property entitled to a pollution abatement under the provisions of clause forty-forth, a cogeneration facility as defined in this section, generation facilities built after January 1, 1998 or generation facilities which have applications before the energy facilities siting board as of January 1, 1997, shall be exempt from taxation if it is used in the manufacture or generation of electricity and it has not, as of January 1, nineteen hundred and ninety-seven, received a manufacturing status exemption. For the purposes of this section a cogeneration facility shall be defined as any electrical generating unit having a power production capacity which, together with any other power generation facilities located at the same site, is not greater than thirty megawatts and which produces electric energy and steam or other form of useful energy utilized for industrial, commercial, heating or cooling purposes.

C. Notwithstanding the provision of any special or general law to the contrary, a non-utility generation facility may be eligible for an exemption under section five of chapter fifty-nine of the General Laws if its affiliated generation company or any company in any way affiliated with any such company except generation companies which burn trash to produce energy, contracted to supply power to an electric company through a purchase power contract in effect prior to August 16, 1995, renegotiates such purchase power contract pursuant to the provisions of section 5(G)(7) of this act. However, such exemption shall only be granted at the end of the ten year period allowed by this section to ramp down the assessments on such a facility to market value, unless such facility is subject to an agreement for payment in lieu of taxes, in which case such facility shall be eligible for the aforementioned exemption after the terms and time period of such an agreement are completed.

D. Notwithstanding the provision of any special or general law to the contrary, any city or town which sites a generation facility the market value of which is 50% or more less than its current net book value shall be eligible to apply for economic target area and/or economic opportunity area status under the provisions of sections 3A through 3G of Chapter 23A of the General Laws.

E. Notwithstanding any provision of any special or general law to the contrary, any city or town in which a generation facility is sited shall, upon request of a majority of the city or town's executive body, be allowed to review any bidding documents provided by generation companies or others interested in purchasing such a generation facility for the purpose of allowing the city or town the opportunity to bid on such facility for purchase by the city or town.

SECTION 8. CONSUMER PROTECTION

A. Through Attorney General

(1) Violations of the provisions of this act shall be deemed a violation of chapter 93A of the general laws. In addition to any other rights and powers bestowed on the Attorney General in any other statute including by not limited to chapter 93A, the Attorney General is hereby authorized to bring an action under chapter 93A to enforce the consumer protection provisions of this act and to obtain restitution, civil penalties and other relief awarded under chapter 93A. At the Attorney General's discretion, the Attorney General may promulgate specific rules and regulations under chapter 93A, section 2(c) relative to methods, acts and practices of generation companies and other suppliers.

B. Through Department of Public Utilities

(1) The department is hereby authorized and directed to promulgate rules and regulations consistent with the following provisions:

(a) Notwithstanding any special or general law to the contrary, all generation companies, aggregators, and suppliers shall register with the department of public utilities as a condition precedent to receiving a license to do business in the commonwealth. A list of all registered generation companies, aggregators and suppliers shall be available to any consumer wishing to access such information through the department.

(b) Notwithstanding any special or general law to the contrary, all generation companies shall submit an application to the department of public utilities for a license to sell electric power to retail customers within the commonwealth. Such application shall include the following:

(i) the company's technical ability to generate or otherwise obtain and deliver electricity and provide any other proposed services;

(ii) documentation of financial capability of the applicant to provide the proposed services; and

(iii) a description of the company's form of ownership.

(iv) documentation regarding any valid purchase power contracts between the company, the company's affiliate(s), or the company's parent or subsidiary and any electric company formed under the provisions of chapter one hundred sixty-four.

A license shall not be granted unless and until all of the above information is provided with a fee, to be determined by the department. Further, a license shall not be granted if the company, the company's affiliate(s), or the company's parent or subsidiary holds a purchase power contract with an electric company which includes terms for power purchases at a cost greater than the market price of electricity and which has not been the subject of renegotiation subject to section 5(G)(6) of this act. Further, any generation company licensed under this subsection shall be required to file an annual report with the department.

(c) Notwithstanding any special or general law to the contrary all private, non-profit, or co-operative aggregators formed pursuant to section 5(F) of this act shall submit an application to the department for a license to do business in the commonwealth, subject to rules and regulations promulgated by the department and subject to a fee as determined by the department.

(d) Notwithstanding any special or general law to the contrary, all energy brokers, energy marketers and other suppliers doing business in the commonwealth shall submit an application to the department for a license to do business in the commonwealth, subject to rules and regulations promulgated by the department, and subject to a fee as determined by the department.

(e) The department is hereby authorized and directed to provide technical assistance to cities and towns seeking such assistance on matters related to transitioning to a competitve electricity market including but not limited to choosing to voluntarily aggregate their citizens' demand for electricity pursuant to section 5(F)(1) of this act and negotiating payments in lieu of taxes pursuant to section 7 of the act.

(f) The department is hereby authorized and directed to establish and advertise a citizen's electricity hotline with a toll-free 1-800 number that shall respond to consumer questions and complaints about their electric service and the transition to a competitive retail electric market. Pursuant to this subsection, the department's rules and regulations shall include the following provisions:

(i) a requirement that all distribution companies and generation companies notify their customers of the terms of their agreement to provide service at the time service is initiated, such agreement being in writing pursuant to subsection (B)(1) (j) of this section;

(ii) a formal procedure allowing a customer to file a complaint against a distribution or generation company;

(iii) a formal dispute resolution procedure in which the department mediates between any customer and a distribution or generation company against which a complaint is issued, subject to a penalty determined by the department including any fines authorized by subsection B(1)(g) of this section. No distribution or generation company may disconnect or discontinue service to a customer for a disputed amount if that customer has filed a complaint that is pending with the department.

(g) The department is hereby authorized to levy fines or other sanctions in event any generation or distribution company doing business in the commonwealth violates any rule or regulation promulgated by the department pursuant to this act, following a hearing before the department.

(h) The department shall continue to provide for special rates for low income customers in effect as of the effective date of this act shall be continued, and the costs of such discounts shall be included in the distribution rates charged to all other customers.

(i) (x) Before a contract is entered into between a generation company and any customer, the generation company shall disclose information on rates to a customer in a written statement which the customer may retain. The department shall promulgate rules and regulations prescribing the form, content and distribution of such information to be disclosed which shall include but not be limited to disclosure of the rate to be charged in cents per kilowatt hour, the length of the contract, the generation

company's fuel portfolio, any charges, fees, penalties, or other conditions imposed upon a customer should they choose to purchase power from another generation company during the term specified in the contract, any other fees, charges, or penalties, and the methods by which a consumer shall be notified of any changes to any of these items. Further, no generation company or supplier may advertise their power as "green" power, or any other term connoting an environmentally beneficial portfolio, unless such portfolio includes energy from renewable sources in the amount of at least twenty percent and does not include nuclear power.

(xx) In addition to the disclosures in the preceding paragraph the department shall promulgate such rules and regulations prescribing information to be disclosed by a generation company in any advertising or marketing of electric rates, which regulations shall include but not be limited to disclosure of the rate to be charged in cents per kilowatt hour in bold print in the case of print advertisements or through clear spoken language in the case of television or radio advertisements.

(xxx) A violation of the provisions contained in the above two paragraphs shall constitute a violation of chapter ninety-three A.

(j) The department shall establish a code of conduct applicable to sales of distribution and transmission services and the retail sale of electricity to residential and small commercial customers including but not limited to rules and regulations governing parameters for privacy of billing information, credit history, obligations for metering, and penalizing companies which have any history of unfair labor practices or striker replacement.

(k) Notwithstanding the provisions of any general or special law to the contrary, each customer choosing a generation company or its affiliate, subsidiary or parent company or a supplier as defined in this act shall be required to affirmatively choose such entity in writing to prevent "slamming", so-called. The department is authorized to established rules and regulations consistent with this section. Further the department shall promulgate rules and regulations allowing any customer the right to rescind without charge their choice of generation company no later than midnight on the third day following the customer's receipt of a written confirmation of an agreement to purchase electricity.

SECTION 9. MUNICIPAL LIGHT DEPARTMENTS; EXEMPTIONS

A. Chapter 164 of the General Laws, as appearing in the 1994 Official Edition, is hereby amended by inserting, after section 47, the following section:--

SECTION 47A. Any municipal light department created under the provisions of chapter 164 of the General Laws shall be exempt from the provisions of this act unless such department is dissolved according to existing statutory procedures, provided however that a municipal light plant may supply generation service outside its own service territory only if outside suppliers may provide generation service within the service territory of that municipal light plant.

SECTION 10. ENVIRONMENTAL PROTECTION

A. Chapter 111 of the General Laws, as appearing in the 1994 Official Edition, is hereby amended by inserting after section 142M, the following section:--

Section 142N. For the purpose of preventing, mitigating or alleviating impacts on the resources of the commonwealth and the to the health of its citizens from pollutants emitted by electric power-producing facilities serving retail customers in the commonwealth, the department of environmental protection shall be regulation adopt and implement uniform generation performance standards of emissions produced per unit of electric output on a portfolio basis, for any pollutant determined by the department of environmental protection to be of concern to public health, and produced in quantity by electric generating facilities. The department of environmental protection shall have said uniform performance standards for at least one pollutant in effect on, but not before, May first, two thousand and three, unless three more other northeastern states enact similar legislation before that date, in which case the department of environmental protection may adopt such standards prior to May first, two thousand and three.

B. Effective January 1, 1998, or the starting date for retail access, whichever is later, and for a period of five years thereafter, each distribution company shall include a charge to fund demand side management programs which such programs designated to be provided through a bid process. The department is authorized and directed to promulgate rules and regulations consistent with this subsection.

C. Beginning January 1, 1998, or the starting date for retail access, whichever is later, the department is hereby authorized and directed to require a mandatory charge of one mill per kilowatt-hour

($0.001) for all electricity consumers of the commonwealth to support the promotion of renewable energy in the commonwealth. There is hereby established a fund on the books of the Massachusetts technology park corporation, hereinafter referred to as the "renewable energy fund", to which shall be credited the proceeds of such mandatory charge the proceeds of any bonds or notes of the commonwealth issued for this purpose, and any appropriations authorized by the general court specifically designated to be credited thereto. The corporation shall hold the renewable energy fund in an account or accounts separate from other funds and those provisions of paragraphs two and three of section five of chapter forty J of the general laws as apply to the center fund of the corporation shall apply as well to the renewable energy fund. In furtherance of the public purpose of encouraging the development and increased use of renewable energy resources in the commonwealth and for other public purposes, and notwithstanding any general or special law to the contrary, the board of directors of the corporation may draw upon the renewable energy fund to make grants, contracts, loans, equity investments or take any other actions, in such forms, under such terms and conditions and pursuant to such selection procedures as the board deems appropriate and otherwise in a manner consistent with good business practices. provided that the Board has determined and incorporation in the minutes of its proceeding that such actions are calculated either: (i) to encourage the continued survival, development and growth of the commonwealth's renewable energy-provider industry; or (ii) to support the expansion of the expertise of residents in the commonwealth in matters related to renewable energy technologies at all levels, including by without limitation, basic research, applied research, the technology transfer and demonstration projects stages, through to full commercialization, and matters related to the conservation of scarce energy resources. The use of the renewable energy fund as aforesaid shall be deemed to be an essential governmental function. The provisions of clause (k) of section four of chapter forty J of the general laws shall not apply to disbursements from the renewable energy fund. The chairperson of the board of directors of the corporation shall appoint as advisory committee pursuant to clause (i) of section four of chapter forty J of the general laws to assist the corporation in matters related to the renewable energy fund; provided that said advisory committee shall include not more than fifteen individuals with knowledge and experience in matters related to the purpose and activities of such fund; provided, further, that at least one-third of the

members of such advisory committee shall be employees of an institution of higher education located in the commonwealth; and provided, further, that said advisory committee shall issue annually a report to such chairperson reviewing the activities of the fund in detail.

SECTION 11. **EMPLOYEE BENEFITS**

A. Notwithstanding any special or general law to the contrary, employees of generation facilities as of January 1, 1997, whose employment is terminated at those facilities through no fault of their own shall be eligible for reemployment assistance benefits as provided by sections 71F and 71G of Chapter 151A of the General Laws, as it appears in the 1994 Official Edition, insofar as such benefits exceed those benefits offered by the owners of such generation facilities.

B. Notwithstanding any special or general law to the contrary, owners of generation facilities shall be subject to the provisions of section 71H of chapter 151A of the General Laws, as it appears in the 1994 Official Edition, should any of the facility's employees claim reemployment assistance benefits as provided in sections 71F and 71G of chapter 151A.

SECTION 12. **OTHER STATUTORY CHANGES**

A. Section 1 of Chapter 30B of the General Laws, it appears in the 1994 Official Edition is hereby amended by adding the following at the end thereof:

(32) contracts entered into by a governmental body for energy or energy related services on behalf of its citizens.

B. Chapter 25 of the General Laws, as it appears in the 1994 Official Edition, is hereby amended by striking section twelve M in its entirety.

C. Chapter 164 of the General Laws, as it appears in the 1994 Official Edition, is hereby amended by striking section 78 and inserting in place thereof the following section:--

Section 78. If any electric, gas, generation, transmission, distribution company, or supplier violates or fails to comply with the provisions of law, or violates or fails to comply with any lawful order of the department, the department shall give written notice thereof to such electric or gas company or supplier and to the attorney general.

D. Section 79 of said chapter 164 is hereby amended by striking out, in lines 3-4, the words "or corporations engaged in the manufacture and sale or distribution and sale of gas or electricity: and inserting the following words:--

, electric, gas, generation, transmission, distribution companies or suppliers

E. Section 87 of said chapter 164 is hereby amended by inserting, in line 2 after the words "or sale", the following words:--

or distribution

F. Section 92 of said chapter 164 is hereby amended by inserting, in line 3, after the words 'manufacture, transmission or sale of gas or", the following words:--

the distribution of

G. Said section 92 of said chapter 164 of the General Laws, is hereby further amended by striking, in line 10, the words "of electricity".

H. Section 92A of said chapter 164 is hereby amended by striking, wherever they appear, the words:-"or electricity"

I. Section 94 of said chapter 164 is hereby amended by inserting, in line 61, after the words "except as therein provided,", the following sentence:--

Generation companies shall be exempt from the provisions of this chapter.

J. Section 94A of said chapter 164 is hereby amended by inserting, in line 47, after the words "shall be null and void", the following sentence:--

The department is authorized to exempt any electric or generation company from any or all of the provisions of this section upon a determination by the department, after notice and a hearing, that an alternative process or incentive mechanism is in the public interest.

K. Section 94G of said chapter 164 is hereby amended by inserting, after subsection (f), the following new subsection:--

(g) The department is authorized to exempt any electric or generation company from any or all of the provisions of this section upon a determination by the department, after notice and a hearing, that an alternative process or incentive mechanism is in the public interest.

L. Section 94G1/2 of said chapter 164 is hereby amended by inserting, after line 177, the following sentence:--

The department is authorized to exempt any electric, generation, or gas company from any or all of the provisions of this section upon a determination by the department, after notice and a hearing, that an alternative process or incentive mechanism is in the public interest.

M. Section 95 of said chapter 164 is hereby amended by inserting, in line 2, after the word "manufacture", the following:--

, distribution,.

N. Section 125A of said chapter 164 is hereby amended by inserting, in line 1, after the words "gas or electric company", the following words:- or generation company.

O. Section 128 of said chapter 164 is hereby amended by inserting, in line 2, after the words "supply and distribution", the following words:-- or only distribution.

SECTION 12. **SEVERABILITY CLAUSE**

If any part, section, or subsection of this act, or the application thereof, shall be held invalid, unconstitutional or inoperative as to any particular person, persons or conditions, the remainder hereof, or the application of any such part, section or subsection to other persons and conditions, shall not be affected thereby.

AN ACT RELATIVE TO THE MASSACHUSETTS MUNICIPAL WHOLESALE ELECTRIC COMPANY

SECTION 1. Section 1 of Chapter 775 of the Acts of 1975 is hereby amended by striking out the definition of "electric power facilities" or "electric power facility" and inserting in place thereof the following two definitions:-

"Energy facilities" or "energy facility", electric power facilities, electric power facility, or any system or facility, or any interest in, or right to the use of, services derived from such facilities, facility or system or any part thereof, (including any energy conservation system or alternative energy facility) for the manufacture, generation, transmission, distribution, transformation, transportation, storage, purchase, sale, exchange or interchange or conservation of energy or any byproducts or ancillary products or services by any means whatsoever, including, without limiting the generality of the foregoing, vehicles, personal or real property and any facility for processing refuse, or other materials into fuel with or without other byproducts, or facilities and property for the acquisition, extraction, conversion, transportation, storage, reprocessing, or disposal of fuel and other material of any kind for any such purposes, all as necessary to carry out the purposes of this act.

"Energy", electricity, electric power, electric capacity, electric energy, natural gas, liquified natural gas, LP air gas, propane air, synthetic natural gas, oil, steam, coal, water, wind, battery, or any byproducts, derivatives, services, ancillary products or ancillary services, or the transmission, transportation, storage, purchase, sale, exchange

or interchange of energy capacity, either electric or other, distribution, disposal, decommissioning thereof, or the transmission, transportation, distribution, storage, disposal, decommissioning or distribution of any byproducts thereof.

SECTION 2. Section 5 of said Chapter 775 is hereby amended by striking out clauses (h) and (i) and inserting in place thereof the following new clauses (h) and (i):-

(h) to sell, lease, mortgage, exchange, transfer or otherwise dispose of, or to grant options for any such purposes with respect to any real or personal property or interest therein, with or without consideration and notwithstanding whether such real or personal property is needed or useful by the corporation all upon such terms and conditions as the corporation shall determine;

(i) to pledge or assign any money, fees, charges, or other revenue of the agency, or any real or personal property and any proceeds derived by the corporation from the sale of energy or property, the purchase of any insurance or condemnation and awards;

SECTION 3. Said Section 5 of said Chapter 775 is hereby further amended by striking out clauses (k) through (p), inclusive, and inserting in place thereof the following new clauses (k) through (p):-

(k) to borrow money and issue its bonds as hereinafter provided and to provide a pooled loan program on behalf of and for the benefit of its members, to make loans to its members, to enter into leases on behalf of its members both as lessee or lessor;

(l) to purchase energy, at wholesale or retail including, without limiting the generality of the foregoing, all or a portion of the capacity and output of energy facilities and steam whether or not produced by an electric power facility;

(m) to sell energy and related products and services to member and non-member cities and towns having municipal electric departments established under Chapter One Hundred and Sixty-Four of the General Laws or a special act and to other utilities, public and private, cities, towns, associations, aggregators, groups, authorities, agencies, political subdivisions, public corporations, private corporations, districts, departments of the Commonwealth, and any other persons or entities authorized to purchase energy both public and private within and without the Commonwealth; all cities and towns and such other entities or persons listed in this section are hereby authorized to purchase energy sold by the corporation;

(n) to contract for the use of generation, manufacturing, transmission, storage, disposal, decommissioning, transportation, and distribution facilities owned by others for the delivery to purchasers of energy sold by the corporation, any such owner is hereby authorized to enter into such contracts with the corporation;

(o) to contract with respect to the purchase, sale, delivery, exchange, interchange wheeling, pooling, transmission, transportation, storage, disposal, decommissioning, or use of energy and to otherwise participate in intrastate, interstate and international arrangements with respect thereto including a New England Power Pool as defined by Section 1 of Chapter One Hundred and Sixty-Four A of the General Laws;

(p) jointly or separately to plan, finance, acquire, construct, improve, purchase, operate, maintain, use, share costs of, own, lease, sell, dispose of, mortgage, or otherwise participate in energy facilities or portions thereof or research and development relating thereto within and without the commonwealth and to enter into and perform contracts with respect thereto if the corporation acquires or owns an interest as a tenant in common with others in any energy facilities within the commonwealth, the surrender or waiver by any such owner of such property of its right to partition such property for a period not exceeding the period for which the property is used or useful for the corporation's purposes shall not be invalid and unenforceable for any reason of length of such period, or as unduly restricting the alienation of such property;

SECTION 4. Said Section 5 of Chapter 775 is hereby further amended by inserting after clause (t) the following clause:-

(u) to enter into contracts determined by the corporation to be necessary or for the prudent management of the corporation's assets, funds, debts, or fuels including without limitation, interest rate swaps, option contracts, future contracts, hedging contracts, leases, or other risk management techniques and forward purchase contracts.

SECTION 5. Section 6 of said Chapter 775 is hereby amended by striking out the first sentence of clause (a) and inserting in place thereof the following new sentence:-

"The corporation may contract to sell, and any entity, person, aggregator, association, agency, authority, district, city, town, political subdivision, departments of the commonwealth, public or private corporation, and any other person or entity authorized to purchase energy within or without the commonwealth, including but not

limited to member and non-member cities and towns having municipal electric departments established under chapter one hundred and sixty-four of the General Laws or by a special act and any utilities, public or private, and any persons permitted by applicable law may contract to purchase all or a portion of the capacity and output of one or more energy facilities or energy, by-products or related or ancillary services sold by the corporation including without limiting the generality of the foregoing, contracts providing for the planning, engineering, design, acquiring sites or options for sites and expenses preliminary or incidental to such facilities."

SECTION 6. Said Section 6 of Chapter 775 is hereby further amended by striking out clause (c) and inserting in place thereof the following new clause (c):-
(c) A city or town shall be obligated to fix, revise, and collect fees and charges for energy and other services, facilities and commodities furnished or supplied through its electric department or systems at least sufficient to provide revenues adequate to meet its obligations under any contracts with the corporation and to pay any and all other amounts payable from or constituting a charge and lien upon such revenues, including amounts sufficient to pay the principal of and interest on all bonds issued by the city or town for electric purposes.

SECTION 7. Section 9 of said Chapter 775 is hereby amended by striking out clause (a) and inserting in place thereof the following new clause (a):-

(a) The corporation may, borrow money by the issue of its bonds for any of its corporate purposes. Bonds may be issued hereunder as mortgage bonds, as general obligations of the corporation or a special obligation payable solely from particular funds. Without limiting the generality of the foregoing, such bonds may be issued for project costs, prepayment of fuel, transmission or transportation of fuel, or the

corporation's share of project costs of energy facilities or long-term purchases of rights to use energy facilities which may include interest prior to and during the carrying out of any project and for a reasonable period thereafter, prepayments under contracts for the purchase of energy, or services related thereto, stranded investment costs, early termination costs of any energy project, decommissioning costs, such reserves for debt service or other capital or current expenses as may be required by a trust agreement or resolution securing bonds, and all other expenses incidental to the determination of the feasibility of any project or to carrying out the project or to placing the project in operation.

SECTION 8. Section 10 of said Chapter 775 is hereby amended by striking out the first two sentences of clause (a) and inserting in place thereof the following two new sentences:-

"In the discretion of the corporation, any bonds issued hereunder may be secured by a resolution of the board or by a trust agreement between the corporation and a corporate trustee, which may be any trust company or bank having the powers of a trust company within or without the commonwealth and such trust agreement shall be in such form and executed in such manner as may be determined by the corporation. Such trust agreement or resolution may pledge or assign, in whole or in part, the revenues and other moneys held or to be received by the corporation, including the revenues from any facilities already existing when the pledge or assignment is made, and any contract or other rights to receive the same, whether then existing or thereafter coming into existence and whether then held or thereafter acquired by the corporation, and the proceeds thereof."

SECTION 9. Said Section 10 of Chapter 775 is hereby further amended by striking out the first sentence of clause (b) and inserting in place thereof the following new sentence:-

"The corporation is authorized to fix, revise, and collect fees and charges for energy and other services, facilities, and commodities furnished or supplied by it."

SECTION 10. Section 11 of said Chapter 775 is hereby amended by striking out the first sentence and inserting in place thereof the following new sentence:-

"The corporation may issue refunding bonds for the purpose of paying any of its bonds at maturity or upon acceleration or redemption."

SECTION 11. Said Chapter 775 of the Acts of 1975 is hereby amended by striking out section 17 in its entirety.